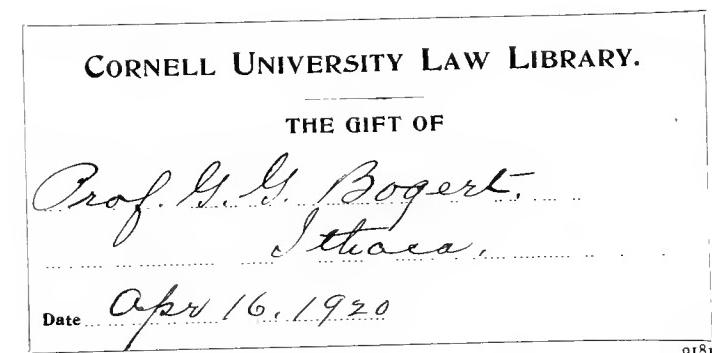


TEXTBOOK
OF
AERIAL LAWS



HENRY WOODHOUSE

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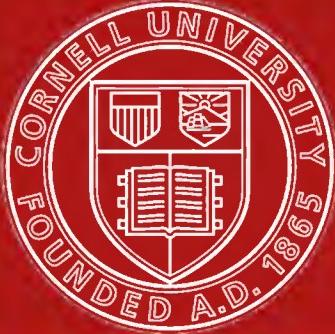
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**TEXTBOOK
OF
AERIAL LAWS**



By Kearny Photo Service

This photograph of 212 aeroplanes flying over San Diego has a number of interesting points for the student of aerial laws and regulations for air traffic. First, it shows that two hundred aeroplanes will fill the sky of a city, and unless well directed by air traffic regulations would create confusion and lead to accidents: Second, the fact that the flight of all these aeroplanes was directed from the ground by radio-telephone indicates that radio-telephony can be used as a means of communication between officers in charge of enforcing traffic regulations and aircraft; Third, it makes evident the necessity of adopting the system of "altitude levels" and "one-way" airways, proposed and adopted by the Aero Club of America, the Aerial League of America, the Aerial Touring Association and other national aeronautic organizations.

Frontispiece

TEXTBOOK OF AERIAL LAWS

AND

REGULATIONS FOR AERIAL NAVIGATION, INTERNATIONAL, NATIONAL AND MUNICIPAL, CIVIL AND MILITARY

BY
HENRY WOODHOUSE

AUTHOR OF "TEXTBOOK OF MILITARY AERONAUTICS," "TEXTBOOK OF NAVAL AERONAUTICS,"
"THE AERO BLUE BOOK"; EDITOR OF "FLYING" AND "AERIAL AGE WEEKLY," ETC.;
VICE-PRESIDENT OF AERIAL LEAGUE OF AMERICA, MEMBER BOARD OF
GOVERNORS AERO CLUB OF AMERICA, ETC.

ADVISORY EDITORS

EDWARD STAFFORD

FORMERLY CAPTAIN 74TH ARTILLERY (C. A. C.),
A. E. F., MEMBER OF THE DISTRICT OF COLUMBIA BAR

W. W. MILLER

CHAIRMAN LAW COMMITTEE AERO CLUB OF AMERICA

MAJOR WILLIAM A. SCULLY, U.S.A.

MEMBER JURIDICAL COMMITTEE AERIAL LEAGUE OF AMERICA

LIEUT. RALPH KIELY, U.S.N.

SECRETARY TO THE AMERICAN AERONAUTIC DELEGATION OF THE PEACE CONFERENCE

HON. MURRAY HULBERT

CHAIRMAN JURIDICAL COMMITTEE AERO CLUB OF AMERICA

THOMAS F. POWERS

NEW YORK BAR, MEMBER JURIDICAL COMMITTEE AERO CLUB OF AMERICA

BERNARD H. SANDLER

MEMBER OF THE LAW COMMITTEE AERO CLUB OF AMERICA, MEMBER NEW YORK BAR

FREDERICK H. ALLEN

MEMBER OF THE BAR OF NEW YORK



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TEXTBOOK OF AERIAL LAWS CIVIL AND MILITARY

PREFACE

THE RIGHT TO FLY—AND THE RIGHT OF PEOPLE BELOW, AS IT APPLIES TO NATIONS, STATES, AND CITIES, AS WELL AS TO INDIVIDUALS

The purpose of this book, the first textbook on this subject, is to make available a complete review of the subject of Aerial Jurisprudence and give the status of aerial laws upon and regulations of aerial navigation, international, national and municipal, civil and military.

Aerial laws upon and regulations of aerial navigation are needed to govern aerial navigation internationally and nationally. A start has been made but it is only a modest start and the aerial code is still to be written. The international agreement for the regulation of international air navigation adopted recently by most of the Allied and Associated Powers serving on the Aeronautical Commission of the Peace Conference opens a very vast subject and every effort should be made to bring about an international agreement on every phase of this subject in the near future, to place aerial navigation under full control and avoid international complications.

It must not be forgotten that Germany stated as its official reason for declaring war against France that French aviators had committed hostile acts on German territory. (See letter handed by the German Ambassador

Schoen to Mr. René Viviani, French minister of foreign affairs, during his farewell audience, August 3rd, 1914, in Chapter entitled "Military Aerial Laws.") Had aerial navigation been under control this *casus belli* would not have existed.

Freedom of the Air and Freedom of the Seas

Freedom of the Air promises to be as difficult to define as Freedom of the Sea.

When the earliest of international jurists, Hugo Grotius, five centuries ago, propounded the doctrine that "The air, running water, the sea—are common to all," he established a basis for discussion of international laws. His treatise *De Jure Belli ac Pacis* was an epoch making contribution, and his doctrine of *mare liberum*, freedom of the seas, is still the ideal doctrine of the international jurist who considers the subject from the standpoint of the idealist. Wars have been waged to establish and maintain this doctrine.

With the lessons of five centuries in regard to the doctrine of the freedom of the seas be-

Notes

fore us, it would seem that there ought not to be much difficulty to establish the doctrine of freedom of the air. But the problems of aerial navigation are different and much more complicated than sea navigation.

The aircraft may be said to have an open road in every direction of the compass, at every hundred feet—up heavenward indefinitely. The aeroplane altitude record is close to 40,000 feet and the limit has not been reached.

Why Great Britain Objected to Freedom of the Air

When the International Aeronautic Conference was held in Paris in 1910, it was proposed that the air should be free to all aviators, regardless of nationality, to navigate in

The representatives of the different nations thoroughly liked the idea. The representatives of Great Britain were the only ones to object. Stripped of official verbosity and reduced to simple phrases their argument was that the idea was beautiful for the millennium to come, but that so long as the millennium was not in evidence Great Britain could not agree because freedom of the air meant that in case of war between two nations the aviators might fight their duels over London, and, with the best of intentions, cause as much damage and loss of life as if England were fighting the battle.

Besides, they pointed out, to give to foreign aircraft, as a matter of acknowledged international law, the right to fly at will over the territory of the State would be to give them undesirable opportunities for espionage, and generally to limit "the elementary rights of a State to take each and every measure which it con-

siders necessary for self-preservation." In time of war, moreover, the doctrine of the "freedom of the air" above a certain altitude would give rise to most embarrassing questions for neutral States. They would actually be exposed to the risk of having aerial battles fought over their territory without being able to claim that their neutrality had been infringed. The case of the upper air presents no true analogy to the case of the high seas outside the limits of territorial waters.

The argument was unanswerable and the proposal fell through.

Applying Wilson Principle of Freedom of the Sea to the Air

The capture of the German Zeppelin 49 by four French aviators during the war, who forced the airship to descend from the height of 17,000 feet and to proceed and land at Bourlonnec-Bains, illustrated the possibility of capturing aircraft exactly as ships are captured. This opens the possibility of conflict due to capture of neutral airships, unless the nations agree to Wilson's freedom of the seas "point" which, paraphrased to cover freedom of the air, would read:

"Absolute freedom of navigation of the air, outside of territorial zones, alike in peace and in war, except as the air may be closed in whole or in part by international action for the enforcement of international covenants."

Three Miles Limit Inadequate in the Air

This brings up the matter of territorial air zones differing from territorial waters. The marine jurisdiction of a State extends three miles beyond the coast line, and no further.

How Are We Going to Police the Airways at 40,000 Feet?



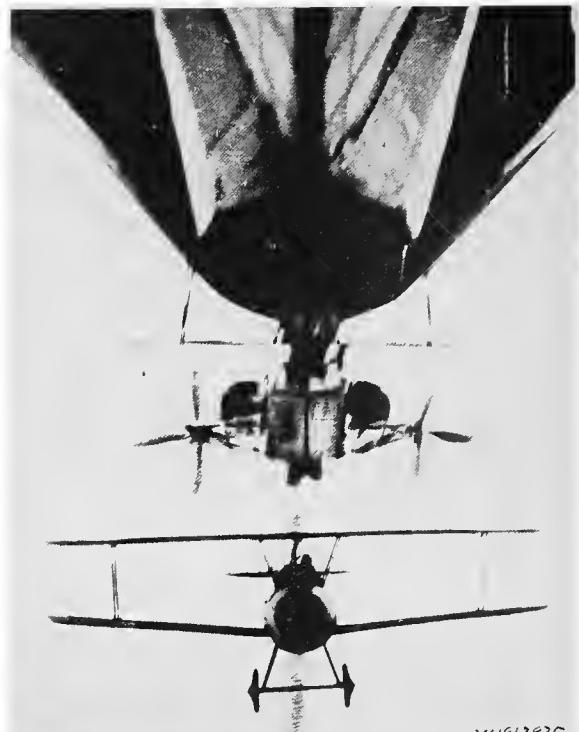
Major R. W. Schroeder starting for the altitude record of 34,000 feet, with a Le Pere biplane equipped with a motor compressor for flying at high altitudes.



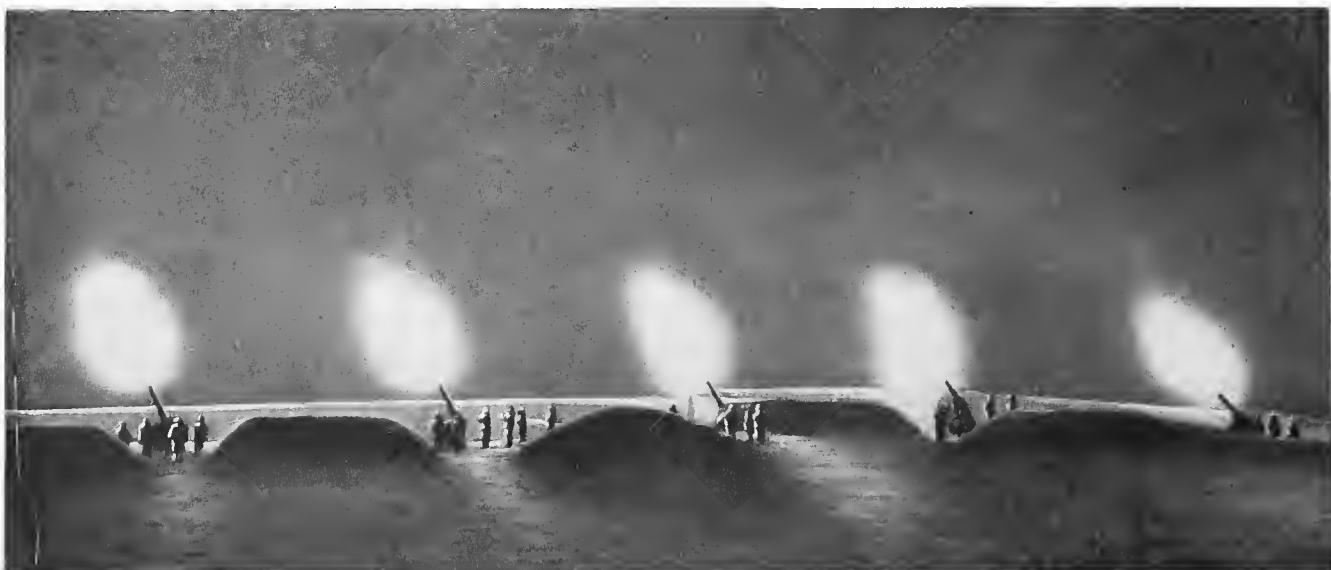
One of the New York Aerial Police aeroplanes. New York was the first city to organize an aerial police, with Colonel Jefferson De Mont Thompson as chief and Major Granville A. Pollock as commanding officer.



One of the balloon "aprons," or nets, which were suspended at great heights in England as an obstacle to German air raiders. It was effective to some extent.



This photograph of a fast scouting aeroplane starting from the keel of a dirigible to which it was attached, shows one way of solving the problem of policing the air. Dirigibles carrying a number of fast scouts can be stationed at different levels and the air traffic can be directed from the dirigibles by radio-telephony. In the event of failure on the part of air pilots to obey instructions, an air scout is released whose duty will be to get the aircraft's number or to force the aircraft to descend to an official landing place for examination.



If the barrage of hundreds of anti-aircraft guns could not prevent night aerial raids—how can aerial smuggling be prevented?

Keeping the aircraft three miles out will not prevent a spy from taking photographs of coast and fortresses. At a height of 5,000 feet or more his camera would have a field of at least six miles and the aircraft is within gliding range of the coast, aeroplanes having a gliding angle of six to one.

Obviously the territorial air zones will have to extend at least 25 miles from the coast and the height will have to be proportionate. But it is just as well to know that, no matter where the boundary line may be established, it will be as difficult to prevent violations as it will be to prevent smuggling.

Violations of Prohibition Act by Air

Supposing that an aeroplane arrives at the Atlantic City Airport. The aviator greets the people around him and remarks that he had a good trip from Boston and proceeds to unload his cargo on an automobile, which is soon on its way to deliver the cargo to its destination.

As a matter of fact he came from Cuba or Montreal and his cargo is alcoholic, therefore contraband and against the Prohibition Act.

Before long it becomes known that aircraft are used to transport alcoholic beverages from Cuba, Canada, or other places, to the United States and some action must be taken to prevent it.

This means patrolling the air as well as controlling aeroplanes and aviators by Federal restriction and licensing, inspecting the cargo and giving them clearance papers as in the case with ships. Patrolling the air is easier said than done.

Supposing that a ship could dive or rise and

disappear from sight under water or in a screen of clouds—policing the sea would certainly be most difficult.

The fact that during the war all the German aerial and anti-aircraft forces could not prevent the Allied aviators from bombing German military and naval bases; and the very powerful British and French aerial and anti-aircraft forces could not prevent the enemy operations, illustrates the difficult of regulating aerial navigation.

During the war no chance was taken. Listening stations were established at intervals of a few miles and thousands of anti-aircraft guns were ready to pour their deadly fire at a given spot in the sky and form an aerial barrage intended to prevent the raiding aeroplane from passing.

The anti-aircraft guns were assisted by hundreds of fighting aeroplanes which patrolled the sky day and night, ever ready to attack and destroy a raiding aeroplane. No prisoners were taken in the air and the percentage of those who survived an aerial battle was small.

Must we do this in peace time?

How Are We Going to Rule Birdmen at 30,000 Feet Altitude, Flying at 300 Miles an Hour?

Since the ending of the war great progress has been made in aerial navigation.

The altitude record was carried to over 30,000 feet and the Atlantic was flown three times in six weeks by the gallant American and British airmen. The Alps, the Andes, the Great Atlas and even the lower Himalaya mountains have been crossed!

Notes

The Sahara desert was conquered by aeroplanes during the war and now regular aerial mail lines are being run across the desert by the French government.

Greater achievements are expected. Flying at heights of 50,000 feet is possible now through the application of the "supercharger," evolved for the United States Army during the war by E. H. Sherbondy, the engineer and wizard who solved the difficult problem of making a turbine revolving at 30,000 revolutions a minute and produced the metal that can stand the heat created by the great speed.

The mission of this revolutionary device was to make it possible for military aeroplanes to fly above the heights reached by the enemy aeroplanes and above the barrage of enemy anti-aircraft guns and conduct raids back of the enemy, on the enemy bases, destroy its bridges, and railways and in other ways striking at the enemy.

This could not be done with the aeroplanes equipped with the motors alone, because the motors were affected by the rarefied air to be met at altitudes of over 20,000 feet.

When the plane reached that altitude the motor lost so much power that it was impossible to go any higher and the machine had, therefore, attained what is technically termed its "ceiling." The Sherbondy supercharger solved the problem by maintaining constant induction pressure in the engine regardless of the altitude and, thereby, preventing the reduction of power due to rarefied air. The Sherbondy supercharger is, in fact, a gas turbine, therefore most revolutionary as a mechanical device, and a marvelous achievement in the field of me-

chanics, regardless of its revolutionary application to solve the problem of flying at high altitudes.

When the apparatus is connected to an aeroplane motor it is operated by the exhaust gases of the motor which are led to the turbine by specially designed manifolds.

The aeroplane equipped with the turbo compressor is supposed to be capable of flying as high as the supply of gasoline and the physical capacity of the pilot permit it to go.

From the experiences of the aviators who have flown to heights of over 30,000 feet, we can deduct that so far as the aviator is concerned, provided he is supplied with an oxygen mask to enable him to inhale oxygen to make up for the lack of it at high altitudes, he seems to be able to go up to heights of 50,000 feet.

Machines are available that can carry fuel needed to go up to 50,000 feet or over.

How Speed of Planes Doubles in the Rarefied Air of High Altitudes

A startling result of using the supercharger is that owing to the rarefied air, there is so much less air resistance at high altitudes that the plane goes twice as fast with the same horse-power!

Therefore, the supercharger not only permits the aviator to go up to great heights but, having reached these heights, his aeroplane goes about twice as fast because of lack of head resistance. Therefore, any of the numerous aeroplanes which are now capable of making a speed of 150 miles per hour and over will make a speed of 300 miles per hour at a height of 30,000 feet!

This is only one of the startling new develop-

ments in aeronautics which we must bear in mind when considering possible laws and regulations for aerial navigation and air traffic.

Aeroplanes Capable of Flying 4,000 Miles Without Stopping

Recent developments also make it possible to construct aeroplanes capable of flying 4,000 miles, or going from Chicago to Paris, without stopping!

The Vickers "Vimy" used by Captain Alcock and Lieutenant Brown in their transatlantic flight, which was accomplished in 16 hours, was a military machine and may be considered as a "back number" from the standpoint of what can be done today in the construction of aeroplanes.

The construction of aeroplanes for commercial transportation across the Atlantic, capable of lifting from fifty to one hundred tons and to carry from seventy-five to one hundred passengers on transatlantic flights, is possible today.

Through the employment of veneer and hollow struts and other parts of the aeroplanes the weight of construction of planes can be reduced by ten to twenty per cent and thereby increase the percentage of useful load which an aeroplane can lift accordingly. At present sixty per cent of the total lifting power of the aeroplane is spent in lifting the aeroplane itself, leaving only forty per cent for useful load.

By applying up-to-date engineering methods and employing plywood and hollow struts, it is possible to construct aeroplanes much stronger than they are today but weighing twenty per cent less. Five per cent additional useful load can be carried in addition by increasing the effi-

ciency of wing curves so that the wings will lift fourteen pounds per square foot. The addition of twenty-five per cent to the useful load of a large aeroplane will make the plane an economic vehicle for the transportation of passengers, mail and express matter.

There are aeroplanes today that can easily fly between the Maine coast and the Irish coast—and a contraband business could be conducted between the two coasts with less danger and risk of detection than can be conducted by the use of boats.

Enforcing International Aerial Laws

International law, while being a true law, has not been enforceable because there has not been power back of it to enforce its decisions. The Peace Treaty, by creating legal rights for Allied airmen to fly across and over and land on the territory of the Central Powers, has created a relative duty on the part of the Allies and Associated Powers to protect these rights and, accepting the assumption that it is the intention of the powers to protect these legal rights, we find that the international aerial laws adopted by the Peace Conference are positive laws. International laws are enforced between nation and nation through diplomatic negotiations, arbitration and, as a last resort, by force of arms.

It is time that we decide the extent to which present maritime, civil and criminal laws can be applied to aeronautic cases.

Aerial Prize Laws?

If the prize law is applicable in the air, then the French aviators who captured the L-49 Zep-

pelin are entitled to part of the \$2,000,000, which was the value of the captured airship, and a prize bounty for the nineteen members of the crew made prisoners; and the Allied aviators who captured enemy aeroplanes are likewise entitled to part of the value of the captured planes and prize bounty for enemy aviators made prisoners.

A precedent has been established by the British Prize Court which awarded a prize bounty to the British aviators who assisted in the destruction of the German cruiser "Breslau," in January, 1919. (See Chapter "Aerial Prize Laws Needed.")

Aerial Salvage Laws?

If the Salvage Law is applicable in the air there will soon be some cases for consideration. There was a case a few years ago in England of a dirigible that broke down and was towed to its aerodrome by another dirigible, and there have been scores of cases of seaplanes towing other seaplanes.

If an aeroplane catches fire in the air and another aeroplane comes to the rescue, flies right over it at the same speed and puts the fire out with its fire extinguishers, will the Courts of Admiralty make a salvage award of portion of the value of the airship, as provided by Maritime Law?

If a dirigible gets out of control and is drifting and another dirigible tows it to port (airport), will the Courts of Admiralty award part of the value of the airship, as provided in the case of sea ships?

Will it be different if the airship lands on

some isolated island or on shallow water and is towed to port as a British blimp towed the other blimp back to its hangar, some years ago?

Aerial Stowaways

Under the Maritime Law, ships or their owners are liable for damages resulting from the negligence of their masters, but the owner of the ship can limit his liability to the amount of the ship's value or his interest in it, in all claims except seamen's wages.

Will this principle be adopted in the case of aircraft and their owners?

Will it be proper to proceed against an airship *in rem*, or *in personam* as provided by the Maritime Law, so one can proceed against the aircraft as though it were the debtor?

Will the master of an aircraft have absolute authority on board of an aircraft, like the master of a ship?

Will aircraft "masters" be forced to return "airmen" to the airport whence they "shipped," following the United States and English maritime statutes, in the case of seamen?

It is well to remember that there are already two cases of aerial stowaways on record, one having crossed the Atlantic on board of the British dirigible R-34.

Does the Constitution Give Federal Courts Jurisdiction Over the Air As It Does Over All Navigable Waters?

Another of the many points to be cleared up: the Federal Courts, as provided by the Constitution and Acts of Congress, exercise both civil

and criminal jurisdiction over all the public navigable waters, including lakes, rivers and canals.

Will all the air be considered navigable air, or will the air over the United States be divided into zones somewhat in the order of the 80 miles wide airways shown on the aeronautic maps of the Aeronautic Maps Association, which give the American and Canadian Airways?

In the meantime, can the Federal Courts, under the authority given by the Constitution and by Congress, exercise civil and criminal jurisdiction over all or any part of the air?

The Individual's Right to Fly

The questions dealing with the individual's right to fly and the rights of people below are also very numerous. The application of remedial law to aeronautics, thereby providing the means by which rights are protected, has been given little consideration. The right of the individual aviator to fly over privately owned land has been challenged by land owners who assert ownership *usque ad coelum*. In France several such cases have been decided in favor of the aviators. In the pre-war case of the farmer of Villeroi, who sought to stop the aeroplanes of a neighboring aviation school and asked indemnity for damages caused by aeroplanes which landed on his farm the Court decided that, though in theory the landowner has rights to the atmosphere overhead, in practice his rights extend only to the tops of the buildings and trees and above them freedom of the air is complete and aerial circulation legally unhampered.

The Court held, also, that the aviator who flies too close to the ground or lands on another man's property, is liable for whatever damages he causes by flying too low or by landing on the property. The owners of the schools were, therefore, ordered to pay for damages caused by the aeroplanes in landing.

The case of the aviator who landed in a grass plot in Van Cortlandt Park, New York, and was arrested, charged with "unlawfully disturbing the grass in a grass plot in Van Cortlandt Park by landing there with an aeroplane without a permit from the proper authorities" brings out the fact that, owing to the lack of landing places for aeroplanes, aviators must either stay at home or run the risk of being arrested if they make a forced landing. Landing places are to the aviator the equivalent of roads to the automobilist. Until chains of landing places are established throughout the country, the aviator's activities will be restricted and he will be a nuisance and will be subject to arrest every time he makes a forced landing.

In other words, the status of aerial navigation is exactly analogous to the status of automobile traffic as it was at about 1898 to 1900, when the necessary provisions for automobile traffic had not yet been made and the automobilist was, therefore, considered a nuisance.

In this present state the aviator is very much in the same position as the man who was in jail and was told by his lawyer that he could not be put in jail.

Federal and State Registration

Although there are no laws to govern aeronautics, aviators are not immune from arrest.

Notes

On the other hand, the recklessness of some aviators makes it necessary to have laws and regulations to curb aerial recklessness. But airmen are not numerous and they can be ruled by the Aero Clubs as they have been for the past fifteen years, until such time as Aerial Laws are enacted, which will provide for Federal and state registration of aircraft and airmen and will solve the problem and prevent the confusion which would be created if different cities should enact confusing laws.

We must, above all, avoid the mistake of considering aircraft as taxicabs and expect them to register in every city. Air traffic must be considered as interstate traffic and aircraft should need only a Federal license, such as is provided for ships by the Steamship Inspection Service of the Department of Commerce and state licenses to operate within states.

The enforcing of aerial navigation regula-

tions will be difficult. For instance, the rule of having aeroplanes carry their license or registration number, which is now part of the international regulations, seems simple until we consider the fact that if the aviator flies low enough for people to see the numbers, he flies too low for safety and will be prosecuted for flying too low. If he flies as high as required by the rules for safety, then his number cannot be read and he can indulge in stunts over a city with impunity. No one will know which craft it was that dropped a monkey-wrench. To cover the last possibility it would be well to make it compulsory to stamp every moving part and equipment of aircraft with the registration number of the aircraft.

These are only some of the interesting aspects of aerial jurisprudence—and they open marvellous opportunities for a twentieth century Blackstone.

HENRY WOODHOUSE.

Notes

INTERNATIONAL LAWS AND REGULATIONS FOR AIR NAVIGATION

The fact that aerial navigation is international in character has been evident since 1870 when sixty-one out of the sixty-five balloons carrying mail and people from Paris succeeded in evading the besieging Germans. Serious consideration of the international aspects of aerial navigation has been given from time to time by the nations since the time of the first Hague Conference, 1899.

The discussions at the Hague Conferences of 1899 and 1907 dealt with the question from the standpoint of military law. Its decisions are quoted under the heading "Military Aerial Laws."

The discussion of civil international aerial laws and rules and regulations for international aerial navigation and air traffic has advanced during the past twenty years, mainly under the auspices of the Federation Aeronautique Internationale (the International Aeronautic Federation), the Institute of International Law, and the International Law Association.

How the International Aeronautic Federation Rules Airmen

The first organization, which represents the national aero clubs of 38 nations, was organized in 1905, and having had jurisdiction over all aerial sporting events and competitions throughout these years, and the Courts having upheld its decisions, and Governments having recognized its regulations, it has been in a posi-

tion to enforce its regulations and decisions internationally, with stupendous results.

For instance, a pilot who violates the regulations governing flying over cities or endangers life, and is "suspended" by the Aero Club of America, which represents the Federation in the United States, will be considered "suspended" by the Aero Clubs of the 38 countries affiliated with the Federation and the pilot will not be permitted to compete in aeronautic sporting events in any of the 38 countries and if he makes a record it will not be recognized. In other words, he is officially and professionally outlawed until the termination of the period of "suspension."

To the Federation and the Clubs affiliated with it, goes the credit of having established and enforced international aerial laws.

Pioneer Authorities on International Aerial Laws

Close study of the "Convention Relating to Air Navigation" agreed upon by the aeronautical commission of the Peace Conference dealing with aerial navigation shows the helpful influence of the writings and opinions of the following authorities: Dr. H. D. Hazeltine; D. Fauchille; Professor A. de Lapradelle; G. Bonnefoy; Henry Couannier; D. Meli; Roland Bonaparte; Colonel Mervyn O'Gorman; Griffith Brewer; Frank S. Lahm; Count H. De La Vaulx; Fernand Jacobs; Enrico Catellani; Al-

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berto Santos-Dumont; S. E. Baldwin; Lord Montagu; d'Estournelle de Constant; Paul Tissandier; Amundsen; Mercanti; Surcouf; Usuelli; Wallace; Campbell-Wood; and other authorities, who discussed the subject during the past twenty years before the International Aeronautic Federation and the Institute of International Law and the International Law Association, whose opinions were, in most cases, the opinions of the national aero clubs and organizations which they represented.

Evolution of International Aerial Laws

Upon the recommendation of the International Aeronautic Federation, and especially through the efforts of the Aero Club of France, the French Government in 1909 took steps to arrange for holding a Conference in Paris, to consider the international aspects of aerial navigation and the advisability of bringing about an international agreement on rules and regulations to govern international aerial navigation. This International Conference was held in Paris from May 18th to July 29th, 1910.

This Conference resulted in the drafting of tentative regulations to govern international aerial navigation, which were approved at the subsequent meetings of the Commission Internationale du Droit Aeronautique appointed by the International Aeronautic Federation and held at Brussels, May 17th and 18th and June 20th and 21st, 1913.

At the 1911 session of the Institute of International Law, the following principles were adopted:

"Article 1.—Aircraft are distinguished as public or as private aircraft.

"Article 2.—Every aircraft must have a nationality and one only. This nationality will be that of the country in which the aircraft has been registered.

"Every aircraft must bear special marks by which it can be identified. The State (country) in which registration is applied for will determine the persons in whose case and the conditions under which registration will be allowed. The State registering an aircraft belonging to an alien cannot, however, claim to afford protection to such aircraft in the territory of the owner's State, as against any laws of that State forbidding its nationals to have their aircraft registered in foreign States.

"Article 3.—International aerial circulation is free, subject to the right of States to take certain steps, which shall be fixed, to insure their security and that of the persons and property of their inhabitants.

"Article 4.—Aerial war is allowed, but only on the condition that it does not present for the persons or property of the pacific population greater dangers than land or sea war."

The Committee on Aeronautics of the International Law Association, at the Conference held at Madrid, 1913, adopted the following principles:

"It appears to the Committee impossible to contend that according to existing international law the air space is free; nor do they think that States would be willing to accept or to act on that view of the law. But they are of the opinion that subject to such safeguards as subjacent States may think it right to impose, aerial navigation should be permitted as a matter of comity.

"There is no reason to anticipate that States will interfere with the passage of foreign airships through the air above their territories in an unreasonable manner, any more than they have interfered with the passage of foreign vehicles through their territories or of foreign vessels through their territorial waters. Indeed any action of this character must be prevented by consideration of reciprocal interest.

"The Committee therefore submit the following resolutions:

"1. It is the right of every State to enact such prohibitions, restrictions, and regulations as it may think proper in regard to the passage of aircraft through the air space above its territories and territorial waters.

"2. Subject to this right of subjacent States, liberty of passage of aircraft ought to be accorded freely to the aircraft of every nation."

Franco-German Agreement as to the Admission of German Aircraft to France and French Aircraft to Germany (1913)

An important step forward was taken in 1913, when the following agreement was adopted to govern the admission of German aircraft in France and French aircraft in Germany:

"(For the sake of clearness the case of German aircraft entering France is alone mentioned in the following Precis, but the corresponding case of French aircraft entering Germany is subject to identical rules.)

"German military aircraft, or other German aircraft carrying officers or soldiers in uniform, may only circulate over French territory or land there upon the invitation of the French Government.

"In cases of necessity, however, a German aircraft may be allowed entry, but to prevent cases of this kind arising, the German Government will give the necessary instructions to its airmen.

"In such cases the aircraft must make the signal of distress and land as soon as possible. The pilot must then notify the nearest French authority, stating his name and domicile, and that authority will take steps for the protection of the aircraft and its contents. The local authority will notify the nearest military authority.

"The military authority will inquire into the alleged case of necessity, to determine whether the entry was justified or not.

"If the justification is established by this inquiry the military authority will obtain from the German officer in charge of the aircraft his word of honor, that neither he nor any member of his crew has committed

any act affecting the national security of the French State, such as taking notes or of photographs or the despatch of wireless messages. The aircraft will then be authorized to return to Germany by such route as the military authorities shall direct.

"When an immediate return to Germany is not practicable, the aircraft, while in France, shall not be subject to any measures save such as are necessary for its safety, and that of its crew and contents, and for the public health.

"If it is not established at the inquiry referred to above, that the entry was justified by necessity, the judicial authorities will be notified and the French Government will be advised.

"The French and German Governments will keep one another advised of the nature of the distinguishing marks of their respective military aircraft.

"As regards the entry into France of German aircraft not belonging to the military service and not carrying officers in uniform, this is permitted, except in the prohibited zones (fortresses, defences) subject to the following conditions:—

"1. The aircraft must have a license to navigate from the proper German authority, and must carry the distinctive marks necessary for its identification.

"2. The pilot must have a proficiency certificate from the proper authority.

"3. He must also have papers certifying his nationality and his station militaire; so must any members of the crew.

"4. He must have a passport for the journey from the diplomatic or consular representatives of France in Germany.

"Aircraft thus admitted must submit to all the requirements of International Law, of the Custom regulations and of the aeronautical regulations in force in France.

"Aircraft not fulfilling the above conditions may be admitted in cases of necessity, but such aircraft must land as soon as possible and notify the nearest civil authority.

"Whenever a German aircraft lands in France the local authorities will take all steps necessary to insure the protection of the aircraft and its crew.

"The two Governments will advise one another of

their respective regulations as to aerial circulation.

"The present agreement is based upon reciprocity of treatment. It will cease to be in force when determined by either Government."

At the Congress of the Pan American Aero-nautic Federation held at Santiago, Chile, on March 17, 1916, with reference to legislation on the subject of aerial locomotion, the Fed-eration recommended that the following prin-ciples be considered by the Pan-American States:

1. Air space to be declared as state property.
2. Navigation of the air space above the American continent and adjacent seas to be free to all Americans and to aliens domiciled in America.
3. States to have sovereign rights over the spaces above their respective territories.

4. All aircraft to have a nationality; public vessels, that of the state to which they belong, private vessels that of the owner.

5. All aircraft to carry a distinctive national em-blem.

6. States to agree upon international regulations governing air traffic.

7. Aerial warfare to be so regulated as to minimize the danger to non-combatants and neutrals.

8. Aerial navies to be used in war under restrictions indicated in 7.

9. The dropping of projectiles to be permitted when the same has a direct bearing on military operations.

10. Private property in the air to be declared inviolable.

11. Belligerents not to interfere with neutral com-merce.

12. Neutral states to be declared inviolable.

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INTERNATIONAL CONVENTION FOR THE REGULATION OF INTERNATIONAL AIR NAVIGATION AGREED BY THE REPRESENTATIVES OF THE ALLIED AND ASSOCIATED POWERS

Following the signing of the Armistice the Allied and Associated Powers were brought to a quick agreement on the international aerial regulations to be adopted, by the necessity of including these regulations in the Peace Treaty, so as to define the limits of future German aerial activities and the privileges which Allied aviators are to enjoy when flying over German territory.

The "Air Clauses" of the Peace Treaty are contained in Section III, articles 198, 199, 200, 201, 202; Section IV, articles 203, 210; Part 8, Annex 1; Part II, articles 313, 314, 315, 316, 317, 318, 319, 320.

All the "Air Clauses" of the Peace Treaty will be found in the chapter entitled "Military Aerial Laws."

For historic and reference purposes we include herewith copy of the letter from Premier Clemenceau to President Wilson urging the creation of an Interallied Aeronautic Committee to advise the Peace Conference and deal with aeronautic matters after the war. The letter follows:

"February 16, 1919.

"The President of the Council, and the President of the Interallied Peace Conference.

"To the President of the Republic of the United States,
Interallied Aeronautic Committee:

Mr. President:

"I have the honor to acknowledge the receipt of your answer of February 7th to my letter of January

24th. I enclose herewith copies of the letters which I have received from Lord Milner and from Monsieur Orlando, as well as my replies.

"I am pleased to note that you agree in principle with my proposition to create an aeronautic committee for after the war. I take the liberty of insisting on the necessity of creating this committee without delay, in order to be able to utilize it as an advisory organ of the Peace Conference. Indeed, the clauses for aerial protection seem to me to have at least an importance equal to the clauses for military and naval protection, and it is of the greatest interest to have a study made by competent personalities of the measures to take against the eventual constitution of a German military aerial fleet. I cannot insist too strongly upon the imperious necessity of this study, on account of the proximity of Germany to London, Brussels, Paris and Rome.

"Likewise I adhere entirely to the British proposition, which seems to be practical and effective, and I request you likewise to give it attention. In case it seems acceptable to you, I wish you would let me know if you could delegate two representatives to the next meeting of the new Interallied Committee, which will take place on Thursday, March 6th, at ten o'clock, at the Directory of Aeronautics, 260 Boulevard St. Germain.

"Please accept, Mr. President, the assurance of my highest consideration, etc.

"(Signed) CLEMENCEAU."

Major General Mason M. Patrick, Chief of the U. S. Air Service, American Expeditionary Forces, and Rear Admiral Harry S. Knapp, U. S. Navy, were the U. S. representatives on the committee.

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Following is the International Convention for the regulation of international air navigation agreed by the representatives of the Allied and Associated Powers, serving on the International Commission dealing with Aerial Navigation, and appointed as a sub-commission of the Peace Conference.

On this commission were represented the five principal Powers as well as Belgium, Brazil, Portugal, Cuba, Greece, Roumania and Serbia. These seven smaller Powers were appointed by the Supreme Council to represent on the Aeronautical Commission all the smaller powers at the Peace Conference.

The complete draft of the aerial regulations prepared by the Aeronautical Commission of the Peace Conference, as adopted at the final meeting of the commission, on May 22nd, 1919, follows:¹

Chapter I—General Principles

Article 1—The contracting States recognise that every State has complete and exclusive sovereignty in the air space above its territory and territorial waters.

Article 2—Each contracting State undertakes in time of peace to accord freedom of innocent passage above its territory and territorial waters as well as above the territories and territorial waters of its Colonies to the aircraft of the other contracting States, provided that the conditions established in this Convention are observed.

All regulations made by a contracting State as to the admission over its territory of the aircraft of the other contracting States shall be applied without distinction of nationality.

Article 3—Each contracting State has the right, for military reasons or in the interest of public safety, to prohibit the aircraft of the other contracting States, under the penalties provided by its legislation and subject to no distinction being made in this respect between its private aircraft and those of the other contracting States, from flying over certain areas of its territory.

If it makes use of this right, it shall publish and notify beforehand to the other contracting States the location and extent of the prohibited areas.

Article 4—Every aircraft which finds itself above a prohibited area shall, as soon as aware of the fact, give the signal of distress provided in Paragraph 17 of Annex D and land outside the prohibited area as near to it as possible and as soon as possible at one of the aerodromes of the State unlawfully flown over.

Chapter II—Nationality of Aircraft

Article 5—No contracting State shall, except by a special and temporary authorisation, permit the flight above its territory of an aircraft which does not possess the nationality of a contracting State.

Article 6—An aircraft possesses the nationality of the State on the register of which it is entered, in accordance with the provisions of Section I. (c) of Annex A.

Article 7—An aircraft shall not be entered on the register of one of the contracting States unless it belongs wholly to nationals of such State.

An incorporated company cannot be the reg-

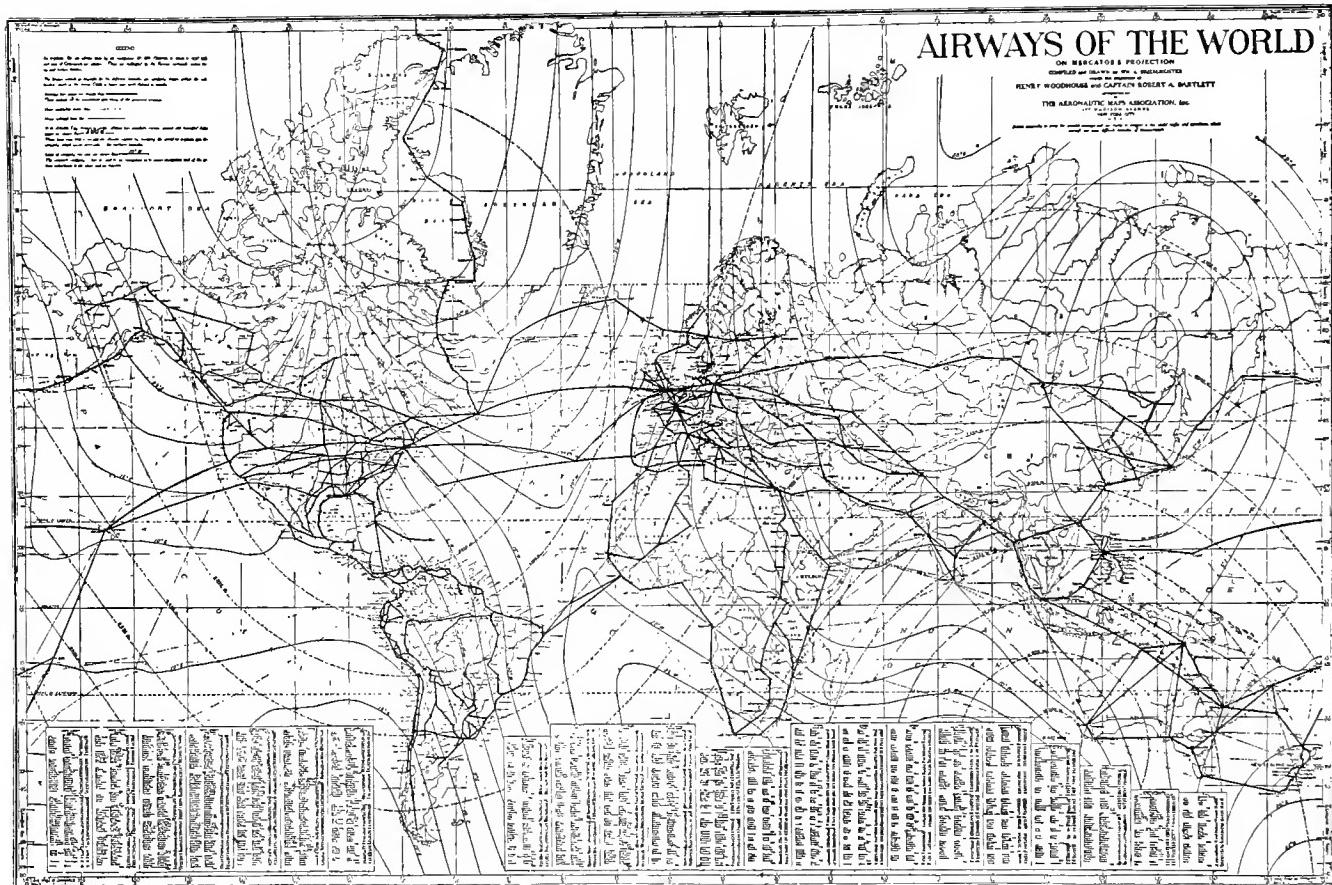
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¹ Revised articles of the Convention, adopted October 13, 1919, are given on pages 51, 52.

Interallied Aeronautical Commission of the Peace Conference which Wrote the International Aerial Convention



Upper row, left to right: Colonel Blandy, R.A.F. (Tech. and Radio); Captain Finzi, R.I.A. (Tech.); Mr. J. L. H. White-Smith, Great Britain (Commercial); Captain Boulanger, French Army; Mr. Yamakawa, Japan (Delegate); Lieutenant Sanda, Italy (Secretary); Captain Tindal-Atkinson, R.A.F. (Secretary and Legal); Major Poli-Marchetti, French Army (Military); Lieutenant Colonel Pujo, French Army (Secretary General); Lieutenant Ralph Kiely, U. S. Navy (Secretary, U. S. Delegation and Technical); Lieutenant Sevier, French Army; Lieutenant Colonel A. Guidoni, Italian Navy (Secretary and Technical); Captain Roper, French Army (assistant to Secretary-General and Interpreter); Captain Nishihari, Japan (Secretary); Lieutenant Armand, French Army. Front row, left to right: Captain Chauvin, French Navy, Chief of French Naval Aviation (Delegate); Rear-Admiral H. S. Knapp, U. S. Navy (Delegate); Major-General Seely, R.A.F., British Under-Secretary of State for Air (Delegate); Mr. Eugenio Chiesa, Italy (Delegate); Colonel Paul Dhé, French Army, Chief of French Military Aviation (Delegate and President of Aeronautical Commission); Major-General Sykes, R.A.F., British Controller, General of Civil Aviation (Delegate); Lieutenant-General Tanaka, Japanese Army (Delegate); General Moris, Italian Army; Rear-Admiral Orsini, Chief of Italian Naval Aviation (Delegate). The commission's duties were: (a) To study all aeronautical questions in which the Peace Conference was concerned; (b) To draft a Convention relating to International Air Navigation in time of peace. The Convention was completed in May, 1919, and after modifications was adopted on October 11, 1919, the United States making a number of reservations. The Convention is printed in full in this Textbook.



Wall map of the World's Airways, which gives 1,100 Air Routes crossing the five continents, illustrating how air lines will connect with the shipping lines, railroad termini, and centers of traffic and commerce the world over, solving difficult problems of transportation. The distances of 1,100 world air routes are given in both miles and kilometers, and the magnetic deviations and other valuable information for navigators is shown. The map gives the time distances in hours east and west of Greenwich; and for different latitudes south of the Arctic Circle, in hours, and north thereof in months. The map is copyrighted by the Aeronautic Maps Association, 299 Madison Avenue, New York City, N. Y., from which copies can be secured.

Five Classes of Regulations for Aerial Navigation

Contestants participating in the Annual Aerial Derby Around the World will have to acquaint themselves with the five classes of regulations, governing aerial navigation, which are as follows:

(1) *International Laws*, dealing with international aerial navigation, which the nations will have to determine from time to time, and which will decide whether or not there shall be freedom of the air.

(2) *National Laws*. To govern and regulate the operation of interstate aircraft and air traffic, and arrival and departure of international aircraft, like the Motorboat Act regulates the navigation of vessels in the United States and like the regulations which govern water traffic and interstate and international water traffic.

(3) *State Laws*, which will essentially aim to protect state property and define state rights and establish whatever regulations and restrictions may be necessary to protect state properties and regulate air traffic within the state.

(4) *Municipal Laws*, which will govern the operation of aircraft over cities and will regulate aerial activities within municipalities.

(5) *Regulations to Govern Sports and Competition*. These regulations already exist, having been drafted by the International Aeronautic Federation and being enforced in the United States by the Aero Club of America, of New York City, which represents the Federation in America.

istered owner of an aircraft unless it possesses the nationality of the State in which the aircraft is registered, and unless the president or chairman of the company and at least two-thirds of the directors possess the same nationality, and unless the company fulfils all other conditions which may be prescribed by the laws of each State.

Article 8—An aircraft cannot be validly registered in more than one State.

Article 9—The contracting States shall every month exchange among themselves and transmit to the International Commission for Air Navigation copies of registrations and of cancellations of registration which shall have been entered on their official registers during the preceding month.

Article 10—All aircraft engaged in international navigation shall bear their nationality and registration marks as well as the name and residence of the owner in accordance with Annex A.

Chapter III—Certificates of Airworthiness and Competency

Article 11—Every aircraft engaged in international navigation shall, in accordance with Annex B, be provided with a certificate of airworthiness issued or rendered valid by the State whose nationality it possesses.

Article 12—The commanding officer, pilots, engineers and other members of the operating crew of every aircraft shall, in accordance with Annex E, be provided with certificates of competency and licences issued or rendered valid by the State whose nationality the aircraft possesses.

Article 13—Certificates of airworthiness and of competency and licences issued or rendered valid by the State whose nationality the aircraft possesses, in accordance with the regulations established by Annex B and Annex E and hereafter by the International Commission for Air Navigation, shall be recognised as valid by the other States.

Each State has the right to refuse to recognise for the purpose of flights within the limits of and above its own territory certificates of competency and licenses granted to one of its nationals by another contracting State.

Article 14—No wireless apparatus shall be carried without a special licence issued by the State whose nationality the aircraft possesses. Such apparatus shall not be used except by members of the crew provided with a special licence for the purpose.

Every aircraft used in public transport and capable of carrying ten or more persons shall be equipped with sending and receiving wireless apparatus when the methods of employing such apparatus shall have been determined by the International Commission for Air Navigation.

This Commission may later extend the obligation of carrying wireless apparatus to all other classes of aircraft in the conditions and according to the methods which it may determine.

Chapter IV—Admission to Air Navigation Above Foreign Territory

Article 15—Every aircraft of a contracting State has the right to cross another State without landing. In this case it shall follow the

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route fixed by the State over which the flight takes place. However, for reasons of general security it will be obliged to land if ordered to do so by means of signals provided in Annex D.

Every aircraft which passes from one State into another shall, if the regulations of the latter State require it, land in one of the aerodromes fixed by the latter. Notification of these aerodromes shall be given by the contracting States to the International Commission for Air Navigation and by it notified to all the contracting States.

The establishment of international airways shall be subject to the consent of the States flown over.

Article 16—Each contracting State shall have the right to reserve to its national aircraft the carriage of persons and goods for hire between two points on its own territory.

Article 17—If a contracting State establishes restrictions of the kind permitted by Article 16, its aircraft may be subjected to the same restrictions in any other contracting State, even though the latter State does not itself impose these restrictions on other foreign aircraft.

Restrictions and reservations provided in Article 16 shall be immediately published, and shall be communicated to the International Commission for Air Navigation which shall notify them to the States interested.

Article 18—The passage or transit of any aircraft with or without landing over or through the territory of any contracting State, including stoppages reasonably necessary for the purpose of such transit, shall not entail any seizure or detention of the aircraft by or on behalf of

such State or any person therein, on the ground that the constitution or mechanism of the aircraft is an infringement of any patent, design, or model, duly granted or registered in such State. Every claim for an infringement of this kind shall be duly made in the country of origin of the aircraft.

Chapter V—Rules to Be Observed on Departure, on Landing, and When Under Way

Article 19—Every aircraft engaged in international navigation shall be provided:

(a) With a certificate of registration in accordance with Annex A.

(b) With a certificate of airworthiness in accordance with Annex B.

(c) With certificates and licences of the commanding officer, pilots and crew in accordance with Annex E.

(d) If it carries passengers, with a list of their names.

(e) If it carries freight, with bills of lading and manifest.

(f) With log books in accordance with Annex C.

(g) If equipped with wireless, with the special licence prescribed by Article 14.

Article 20—The log books shall be kept for two years after the last entry.

Article 21—Upon the departure of an aircraft, the authorities of the country shall have, in all cases, the right to visit the aircraft and to verify all the documents with which it must be provided.

Article 22—Upon the landing of an aircraft,

the authorities of the country shall have, in all cases, the right to visit the aircraft and to verify all the documents with which it must be provided.

Article 23—All persons on board an aircraft shall conform to the laws and regulations of the State visited.

In case of flight made without landing, from frontier to frontier, all persons on board shall conform to the laws and regulations of the country flown over, the purpose of which is to ensure that the passage is innocent.

Legal relations between persons on board an aircraft in flight are governed by the law of the nationality of the aircraft.

In case of crime or misdemeanour committed by one person against another on board an aircraft in flight the jurisdiction of the State flown over applies only in case the crime or misdemeanour is committed against a national of such State and is followed by a landing during the same journey upon its territory.

The State flown over has jurisdiction:—

(1) With regard to every breach of its laws for the public safety and its military and fiscal laws;

(2) In case of a breach of its regulations concerning air navigation.

Article 24—Aircraft of the contracting States shall be entitled to the same measures of assistance for landing, particularly in case of distress, as national aircraft.

With regard to the salvage of aircraft wrecked at sea the regulations of the several contracting States as to the salvage of ships will apply so far as practicable.

Article 25—Every aerodrome in a contract-

ing State, which upon payment of charges is open to public use by its national aircraft, shall likewise be open to the aircraft of all the other contracting States.

In every such aerodrome there shall be a single tariff of charges for landing and length of stay applicable alike to national and foreign aircraft.

Article 26—Each contracting State undertakes to adopt measures to ensure that every aircraft flying above the limits of its territory, and that every aircraft under its flag, wherever it may be, shall comply with the regulations contained in Annex D of the present Convention. It will punish all persons who do not obey these regulations.

Chapter VI—Prohibited Transport

Article 27—The carriage by aircraft of explosives and of arms and munitions of war is forbidden in international navigation. No foreign aircraft shall be permitted to carry such articles between any two points in the same contracting State.

Article 28—Each State may prohibit or regulate the carriage or use of photographic apparatus. Any such regulations shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to all the other contracting States.

Article 29—As a measure of public safety the carriage of objects other than those mentioned in Articles 27 and 28 may be subjected to restrictions by each contracting State. Any such regulations shall be at once notified to the International Commission for Air Navigation,

which shall communicate this information to all the other contracting States.

Article 30—All restrictions mentioned in Article 29 shall be applied equally to national and foreign aircraft.

Chapter VII—State Aircraft

Article 31—The following are deemed to be State aircraft:—

- (a) Military aircraft.
- (b) Aircraft exclusively employed in State service, such as posts, customs, police.

Every other aircraft is a private aircraft. All State aircraft other than military, customs, and police aircraft shall be treated as private aircraft and as such shall be subject to all the provisions of the present Convention.

Article 32—Every aircraft commanded by a person in military service detailed for the purpose is deemed to be a military aircraft.

Article 33—Neither the flight of a military aircraft of a contracting State over the territory of another nor its landing upon such territory shall be permitted without special authorisation.

In case of such authorisation the military aircraft shall enjoy in the absence of special stipulation the privileges of exterritoriality which are customarily accorded to foreign ships of war.

A military aircraft which is forced to land or which is required or compelled to land shall, by reason thereof, acquire no right to exterritoriality.

Article 34—Agreements between State and State will determine in what cases police and customs aircraft can be authorised to cross the

frontier. They shall in no case be entitled to the privileges of exterritoriality.

Chapter VIII—International Commission for Air Navigation

Article 35—There shall be instituted, under the name of the International Commission for Air Navigation and as part of the organisation of the League of Nations, a permanent Commission composed of:

Two representatives of each of the following States: The United States of America, France, Italy, and Japan;

One representative of Great Britain and one of each of the British Dominions and of India;

One representative of each of the other contracting States.

Each of the five States first-named (Great Britain, the British Dominions and India counting for this purpose as one State) shall have the least whole number of votes which, when multiplied by five will give a product exceeding by at least one vote the total number of votes of all the other contracting States.

All the States other than the five first-named shall each have one vote.

The International Commission for Air Navigation shall determine the rules of its own procedure and the place of its permanent seat, but it shall be free to meet in such places as it may deem convenient. Its first meeting shall take place at Paris. This meeting shall be convened by the French Government, as soon as a majority of the signatory States shall have notified to it their ratification of the present Convention.

The duties of this Commission are:—

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(a) To receive proposals from or to make proposals to any of the contracting States for the modification or amendment of the provisions of the present Convention and to notify changes adopted.

(b) To carry out the duties imposed upon it by the present Article and by Articles 9, 13, 14, 15, 17, 28, 29, and 38 of the present Convention.

(c) To amend the provisions of the technical Annexes.

(d) To collect and communicate to the contracting States information of every kind concerning international air navigation.

(e) To collect and communicate to the contracting States all information relating to wireless, meteorology and medical science which may be of interest to air navigation.

(f) To ensure the publication of maps for air navigation in accordance with the provisions of Annex F.

(g) To give its opinion on questions which the States may submit for examination.

Any modification of the provisions of any one of the Annexes may be made by the International Commission for Air Navigation when such modification shall have been approved by three-fourths of the total possible vote and shall become effective from the time when it shall have been notified by the International Commission for Air Navigation to all the contracting States.

Any proposed modification of the articles of the present Convention shall be examined by the International Commission for Air Navigation, whether it originates with one of the contracting States or with the International Commiss-

sion for Air Navigation itself. No such modification shall be proposed for adoption by the contracting States, unless it shall have been approved by at least two-thirds of all the possible votes which could be cast if all the States were present.

All such modifications of the articles of the Convention (not of the provisions of the Annexes) must be formally adopted by the contracting States before they become effective.

The expenses of organisation and operation of the International Commission for Air Navigation shall be borne by the contracting States in proportion to the number of votes at their disposal.

The expenses occasioned by the sending of technical delegations will be borne by their respective States.

Chapter IX—Final Provisions

Article 36—Each contracting State undertakes to co-operate as far as possible in international measures concerning:

(a) The collection and dissemination of statistical, current, and special meteorological information, in accordance with the provisions of Annex G.

(b) The publication of standard aeronautical maps, and the establishment of a uniform system of ground marks for flying, in accordance with the provisions of Annex F.

(c) The use of wireless in air navigation, the establishment of the necessary wireless stations, and the observation of international wireless regulations.

Article 37—General provisions relative to

customs in connection with international air navigation are the subject of a special agreement contained in Annex H to the present Convention.

Nothing in the present Convention shall be construed as preventing the contracting States from concluding, in conformity with its principles, special protocols as between State and State in respect of customs, police, posts, and other matters of common interest in connection with air navigation.

Article 38—In the case of a disagreement of two or more States relating to the interpretation of the present Convention, the question in dispute shall be determined by the Permanent Court of International Justice to be established by the League of Nations and until its establishment by arbitration.

If the parties do not agree on the choice of the arbitrators, they shall proceed as follows:—

Each of the parties shall name an arbitrator, and the two arbitrators shall meet to name a third. If the arbitrators cannot agree, the parties shall each name a third State, and the third State so named shall proceed to designate the third arbitrator, by agreement or by each proposing a name and then determining by lot the choice between the two.

In case of the disagreement of two or more contracting States relating to one of the technical regulations annexed to the present Convention, the point in dispute shall be determined by the decision of the International Commission for Air Navigation by a majority of votes.

In case the difference involves the question whether the interpretation of the Convention or that of a regulation is concerned, final decision

shall be made by arbitration as provided in the first paragraph of this Article.

Article 39—In case of war, the provisions of the present Convention do not affect the freedom of action of the contracting States either as belligerents or as neutrals.

Article 40—The provisions of the present Convention are completed by the Annexes A-H, which have the same effect and come into force at the same time as the Convention itself.

Article 41—The British Dominions and India are deemed to be States for the purposes of the present Convention.

Protectorates, or territories administered by the League of Nations or placed under its control are, for the purposes of the present Convention, deemed to form part of the Protecting or Mandatory States, both as regards their territory and as regards their nationals.

Article 42—The present Convention shall come into force as between any of the contracting States as soon as such States shall have exchanged ratifications, which shall take place within one year.

The ratifications shall be deposited in the archives of the Ministry of Foreign Affairs of the French Republic.

Article 43—The States which have not taken part in the present war shall be admitted to adhere to the present Convention upon their simple declaration notified to the Ministry of Foreign Affairs of the French Republic, which shall inform the contracting States of such adherence.

Article 44—Any State which took part in the present war but which did not take part in the negotiation of this Convention may express its

desire to adhere to this Convention and may be admitted to adhere to it, if such State is a member of the League of Nations or, until January 1, 1923, by a unanimous vote of the signatory and adhering States, or, after January 1, 1923, by an affirmative vote comprising at least three-fourths of the total possible votes of the signatory and adhering States, the votes of the different States having the same weight as that provided by Article 35 of this Convention for the International Commission for Air Navigation.

The Ministry of Foreign Affairs of the French Republic shall receive requests for adherence to this Convention under the conditions provided by this article, shall communicate them to the contracting States, shall receive the votes of the contracting States and shall announce the result of the vote.

Article 45—The denunciation of the present Convention shall take effect with regard only to the State which shall have given notice of it. Such notice shall not be given before January 1, 1922 (nineteen hundred and twenty-two) and the denunciation shall not take effect until at least one year after the giving of notice.

Notices under this article shall be given to the Ministry of Foreign Affairs of the French Republic, who shall communicate them to the contracting States.

Done at Paris, 1919, in the English and French languages, which shall be of equal validity and authority, in a single copy which shall remain deposited in the archives of the French Government, and duly certified copies of which shall be sent, through the diplomatic channel, to the contracting States.

Annex A—The Marking of Aircraft

GENERAL: (a) The nationality mark will be represented by capital letters in Roman characters—*e.g.*

France.....F.

The registration mark shall be represented by a group of four capital letters; each group shall contain at least one vowel, and for this purpose the letter Y shall be considered as a vowel. The complete group of five letters shall be used as a call sign of the particular aircraft in making or receiving signals by wireless telegraphy or other methods of communication, except when opening up communication by means of visual signals, when the usual methods will be employed. The nationality and registration marks are assigned in accordance with the table contained in section VIII of this Annex.

(b) On aircraft other than State and commercial, the registration mark shall be underlined with a black line.

(c) The entry in the register and the certificate of registration shall contain a description of the aircraft and shall indicate the number or other identification mark given to it by the maker; the nationality and registration marks mentioned above; the usual station of the aircraft; the full name, nationality, and residence of the owner and the date of registration.

(d) All aircraft shall carry affixed to the car or to the fuselage in a prominent position a metal plate, inscribed with the names and residence of the owner and the marks of nationality and registration.

(Here follows a Provisional Form of the Certificate of Registration.)

Notes

LOCATION OF MARKS—The nationality and registration marks shall be painted in black on a white ground in the following manner:—

(a) *Flying Machines*—The marks shall be painted once on the lower surface of the lower main planes and once on the upper surface of the top main planes, the top of the letters to be towards the leading edge. They shall also be painted along each side of the fuselage between the main planes and the tail planes. In cases where the machine is not provided with a fuselage the marks shall be painted on the nacelle.

(b) *Airships and Balloons*—In the case of airships the marks shall be painted near the maximum cross section on both sides and on the upper surface equidistant from the letters on the sides.

In the case of balloons the marks shall be painted twice near the maximum horizontal circumference, as far as possible from one another.

In the case both of airships and balloons the side marks shall be visible both from the sides and ground.

ADDITIONAL LOCATION OF NATIONALITY MARKS: (a) *Flying Machines and Airships*—The nationality mark shall also be painted on the left and right sides of the lower surface of the lowest tail planes or elevators and also on the upper surface of the top tail planes or elevators, whichever is the larger. It shall also be painted on both sides of the rudder, or on the outer sides of the outer rudders if more than one rudder is fitted.

(b) *Balloons*—The nationality mark shall be painted on the basket.

MEASUREMENTS OF NATIONALITY AND REGISTRATION MARKS—(a) *Flying Machines*—The

height of the marks on the main planes and tail planes respectively shall be equal to four-fifths of the chord, and in the case of the rudder shall be as large as possible. The height of the marks on the fuselage or nacelle shall be four-fifths of the depth of the narrowest part of that portion of the fuselage or nacelle on which the marks are painted.

(b) *Airships and Balloons*—In the case of airships, the nationality marks painted on the tail plane shall be equal in height to four-fifths of the chord of the tail plane and in the case of the rudder the marks shall be as large as possible. The height of the other marks shall be equal to at least one-twelfth of the circumference at the maximum transverse cross section of the airship.

In the case of balloons the height of the nationality mark shall be four-fifths of the height of the basket, and the height of the other marks shall be equal to at least one-twelfth of the circumference of the balloon.

(c) *General*—In the case of all aircraft the letters of the nationality and registration marks need not exceed 2·5 metres in height.

MEASUREMENT, TYPE OF LETTERS, &c.—(a) The width of the letters shall be two-thirds of their height and the thickness shall be one-sixth of their height. The letters shall be painted in plain block type and shall be uniform in shape and size. A space equal to half the width of the letters shall be left between the letters.

(b) In the case of underlined letters the thickness of the line shall be equal to the thickness of the letter and the space between the bottom of the letters and the line shall be equal to the thickness of the line.

Notes



A Handley-Page biplane marked as required by the international regulations. The letter "G" on the rear controls and on the fuselage, connected with the other letters by hyphen, designates the nationality of the aircraft. The other letters represent the registration designation, the character of work in which the aircraft is engaged, etc. (See Annex A describing the marking of aircraft.)



A Sopwith aerial limousine marked as required by the international regulations.



A French commercial transport Breguet biplane marked as required by the international regulations.



Two Twin-Motored Curtiss Seaplanes In Flight

The international regulations contain the following rules of the air:

A motor-driven aircraft must always manoeuvre according to the rules contained in the following paragraphs as soon as it is apparent that, if it pursued its course, it would pass at a distance of less than 200 meters from any part of another aircraft.

When two motor-driven aircraft are meeting end on, or nearly end on each shall alter its course to the right.

When two motor-driven aircraft are on courses which cross, the aircraft which has the other on its own right side shall keep out of the way of the other.

An aircraft overtaking any other shall keep out of the way of the overtaken aircraft by altering its own course to the right, and must not pass by diving.

Every aircraft coming up with another aircraft from any direction more than 110 degrees from ahead of the latter, i.e., in such a position with reference to the aircraft which it is overtaking that at night it would be unable to see either of that aircraft's side lights, shall be deemed an overtaking aircraft, and no subsequent alteration of the bearing between the two aircraft shall make the overtaking aircraft a crossing aircraft within the meaning of these rules, or relieve it of the duty of keeping clear of the overtaken aircraft until it is finally past and clear.

As by day the overtaking aircraft cannot always know with certainty whether it is forward or abaft the direction mentioned above from the other aircraft, it should, if in doubt, assume that it is an overtaking aircraft and keep out of the way.

Where by any of these rules one of the two aircraft is to keep out of the way, the other shall keep its course and speed. When, in consequence of thick weather or other causes, the aircraft having the right of way finds itself so close that collision cannot be avoided by the action of the giving-way aircraft alone, it shall take such action as will best aid to avert collision.

Every aircraft which is directed by these rules to keep out of the way of another aircraft shall, if the circumstances of the case admit, avoid crossing ahead of the other.

In following an officially recognized air route, every aircraft, when it is safe and practicable, shall keep to the right side of such route.

All aircraft on land or sea, about to ascend shall not attempt to "take-off" until there is no risk of collision with alighting aircraft.

SPACING BETWEEN NATIONALITY AND REGISTRATION MARKS—Where the nationality and registration marks appear together, a hyphen of a length equal to the width of one of the letters shall be painted between the nationality mark and registration mark.

MAINTENANCE—The nationality and registration marks shall be displayed to the best possible advantage, taking into consideration the constructional features of the aircraft. The marks must be kept clean and visible.

TABLE OF MARKS—The nationality mark of the State named below applies to the aircraft of its Dominions, Colonies, Protectorates, dependencies, or of countries of which it is the Mandatory State.

Country	Nationality Mark	
United States of America	N	All combinations made in accordance with the provisions of Section 1 (a) of this Annex, using a group of 4 letters out of the 26 of the alphabet, each group containing at least one vowel—e.g., ADCJ, PURN
British Empire	G	
France	F	
Italy	I	
Japan	J	
Bolivia	C	All combinations made with B as first letter
Cuba	C	All combinations made with C as first letter
Portugal	C	All combinations made with P as first letter
Roumania	C	All combinations made with R as first letter
Uruguay	C	All combinations made with U as first letter
Czecho-Slovakia	L	All combinations made with B as first letter
Guatemala	L	All combinations made with G as first letter
Liberia	L	All combinations made with L as first letter
Brazil	P	All combinations made with B as first letter
Poland	P	All combinations made with P as first letter
Belgium	O	All combinations made with B as first letter
Peru	O	All combinations made with P as first letter
China	X	All combinations made with C as first letter
Honduras	X	All combinations made with H as first letter
Serbia-Croatia-Slavonia	X	All combinations made with S as first letter
Haiti	H	All combinations made with H as first letter
Siam	H	All combinations made with S as first letter
Ecuador	E	All combinations made with E as first letter
Greece	S	All combinations made with G as first letter
Panama	S	All combinations made with P as first letter
Hedjaz	A	All combinations made with H as first letter

Annex B—Certificates of Airworthiness

The following main conditions govern the issue of certificates of airworthiness:

1. The design of the aircraft in regard to safety shall conform to certain standard minimum requirements.

2. A satisfactory demonstration must be made in flying trials of the actual flying qualities of the type of aircraft examined, provided that machines subsequently manufactured which conform to the approved type need not be subject to such trials. The trials shall conform to certain standard minimum requirements.

3. The construction of every aircraft with regard to workmanship and materials must be approved. The control of the construction and of the tests shall be in accordance with certain standard minimum requirements.

4. The aircraft must be equipped with suitable instruments for safe navigation.

5. The standard minimum requirements of paragraphs 1 to 3 inclusive shall be fixed by the International Commission for Air Navigation. Until they have been so fixed each contracting State shall determine the regulations under which certificates of airworthiness shall be granted or remain valid.

Annex C—Log Books

JOURNEY LOG—This shall be kept for all aircraft and shall contain the following particulars:

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner; name of maker and the carrying capacity of the aircraft.

(b) In addition for each journey—

(i) The names, nationality and residence of each of the members of the crew.

(ii) The place, date, and hour of departure, the route followed, and all incidents *en route* including landings.

Notes

AIRCRAFT LOG—This is obligatory only in the case of aircraft carrying passengers or goods for hire, and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner; name of maker and the carrying capacity of the aircraft.

(b) Type and series number of engine; type of propeller showing number, pitch, diameter and maker's name.

(c) Type of wireless apparatus fitted.

(d) Table showing the necessary rigging data for the information of persons in charge of the aircraft and of its maintenance.

(e) A fully detailed engineering record of the life of the aircraft, including all acceptance tests, overhauls, replacements, repairs and all works of a like nature.

ENGINE LOG—This is obligatory only in the case of engines installed in aircraft carrying passengers or goods for hire, and in such cases a separate log book shall be kept for each engine and shall always accompany the engine. It shall contain the following particulars:—

(a) Type of engine, series number, maker's name, power, normal maximum revolutions of engine, date of production and first date put into service.

(b) Registration mark and type of aircraft in which the engine has been installed.

(c) A fully detailed engineering record of the life of the engine, including all acceptance tests, hours run, overhauls, replacements, repairs, and all work of a like nature.

SIGNAL LOG—This is obligatory only in the

case of aircraft carrying passengers or goods for hire, and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner.

(b) Place, date, and time of the transmission or reception of any signal.

(c) Name or other indication of the person or station to whom a signal is sent or from whom a signal is received.

INSTRUCTIONS FOR USE OF LOG BOOKS—(a)

The constructor should fill in and sign the original entries in the log books, as far as he is in a position to do so. Subsequent entries should be made and signed by the pilot or other competent person.

(b) A copy of the certificate of airworthiness should be kept in the pocket at the end of the aircraft log book.

(c) All entries to be in ink, except in the case of journey and signal log books; the entries for these may be made in pencil in a rough note book, but should be entered in ink in the log book every 24 hours. In the event of any official investigation the rough note book may be called for.

(d) No erasures should be made in, nor pages torn from, any log book.

(e) A copy of these instructions should be inserted in each log book.

Annex D—Rules of the Air

DEFINITIONS—The word “aircraft” comprises all balloons, whether fixed or free, kites, airships, and flying machines.

Notes

The word "balloon," either fixed or free, shall mean an aircraft using gas lighter than air as a means of support, and having no means of propulsion.

The word "airship" shall mean an aircraft using gas lighter than air as a means of support, and having means of propulsion.

The words "flying machine" shall mean all aeroplanes, seaplanes, flying boats, or other aircraft heavier than air, and having means of propulsion.

An airship is deemed to be "under way" within the meaning of these rules when it is not made fast to the ground or any object on land or water.

Rules as to Lights and Signals

The word "visible" in these rules when applied to lights shall mean visible on a dark night with a clear atmosphere. The angular limits laid down in these rules as shown in the sketch (attached) shall be determined when the aircraft is in its normal attitude for flying on a rectilinear horizontal course.

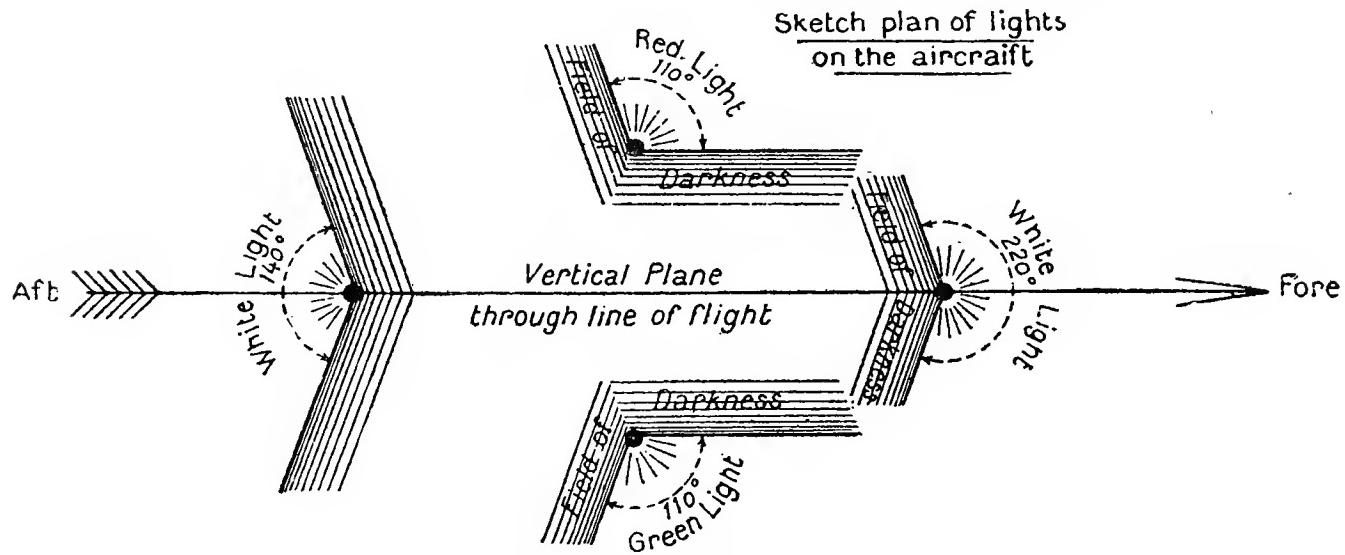
1. The rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such time no other lights which may be mistaken for the prescribed lights shall be exhibited. The prescribed navigation lights must not be dazzling.

2. A flying machine, when in the air or manoeuvring on land or water under its own power, shall carry the following lights:—

(a) Forward, a white light visible in a dihedral angle of 220 degs. bisected by a vertical plane through the line of flight, and of such a character as to be visible at a distance of at least 8 kilometres.

(b) On the right side, a green light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degs. when measured to the right from dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.

(c) On the left side, a red light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degs. when measured to the left from



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dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.

(d) The said green and red side lights shall be fitted so that the green light shall not be seen from the left side, nor the red light from the right side.

(e) At the rear, and as far aft as possible, a white light shining rearwards and visible in a dihedral of 140 degs. bisected by a vertical plane through the line of flight and of such a character as to be visible at a distance of at least 5 kilometres.

(f) In the case where, in order to fulfil the above conditions, the single light has to be replaced by several lights, the field of visibility of each of these lights should be so limited that only one can be seen at a time.

3. The rules determined for the lighting of flying machines shall apply to airships subject to the following modifications:—

(a) All lights shall be doubled; the forward and aft lights vertically, and the side lights horizontally in a fore and aft direction.

(b) Both lights of each pair forward and aft shall be visible at the same time.

The distance between the lights comprising a pair shall not be less than 2 metres.

4. An airship, when being towed, shall carry the lights specified in paragraph 3, and, in addition, those specified in paragraph 6 for airships not under control.

5. (a) A flying machine, or airship, when on the surface of the water, and when not under control, that is to say, not able to manœuvre as required by the Regulations for the Prevention of Collisions at Sea, shall carry two red lights not less than 2 metres apart one over the other,

and of such a character as to be visible all around the horizon at a distance of at least 3 kilometres.

(b) The aircraft referred to in this paragraph, when not making way through the water, shall not carry the side lights, but when making way shall carry them.

6. An airship which from any cause is not under control, or which has voluntarily stopped her engines shall, in addition to the other specified lights, display conspicuously two red lights, one over the other, not less than 2 metres apart, and constructed to show a light in all directions, and of such a character as to be visible at a distance of at least 3 kilometres.

By day an airship, when being towed, which from any cause is not under control, shall display conspicuously two black balls or shapes, each 60 cms. in diameter, placed one over the other not less than 2 metres apart.

An airship moored, or under way but having voluntarily stopped its engines, shall display conspicuously by day a black ball or shape, 60 cms. in diameter, and shall be treated by other aircraft as being not under control.

7. A free balloon shall carry one bright white light below the car at a distance of not less than 5 metres, and so constructed as to show an unbroken light in all directions, and of such a character as to be visible at a distance of at least 3 kilometres.

8. A fixed balloon shall carry in the same position as the white light mentioned in paragraph 7, and in lieu of that light, three lights in a vertical line one over the other, not less than 2 metres apart. The highest and lowest of these lights shall be red, and the middle light shall

be white, and they shall be of such a character as to be visible in all directions at a distance of at least 3 kilometres.

In addition, the mooring cable shall have attached to it at intervals of 300 metres, measured from the basket, groups of three lights similar to those mentioned in the preceding paragraph. In addition, the object to which the balloon is moored on the ground shall have a similar group of lights to mark its position.

By day the mooring cable shall carry in the same position as the groups of lights mentioned in the preceding paragraph, and in lieu thereof, tubular streamers not less than 20 cms. in diameter and 2 metres long, and marked with alternate bands of white and red, 50 cms. in width.

9. An airship when moored near the ground shall carry the lights specified in paragraphs 2 (a) and (e) and 3.

In addition, if moored but not near the ground, the airship, the mooring cable, and the object to which moored, shall be marked in accordance with the provisions of paragraph 8, whether by day or by night.

Sea anchors or drogues used by airships for mooring purposes at sea are exempt from this regulation.

10. A flying machine stationary upon the land or water but not anchored or moored shall carry the lights specified in paragraph 2.

Preventing Collisions with Surface Craft

11. In order to prevent collisions with surface craft:—

(a) A flying machine when at anchor or moored on the water shall carry forward, where

it can best be seen, a white light, so constructed as to show an unbroken light visible all round the horizon at a distance of at least 2 kilometres.

(b) A flying machine of 50 metres or upwards in length, when at anchor or moored on the water, shall, in the forward part of the flying machine, carry one such light, and at or near the stern of the flying machine, and at a height that it shall not be less than 5 metres lower than the forward light, another such light.

The length of a flying machine shall be deemed to be the overall length.

(c) Flying machines of 50 metres or upwards in span, when at anchor or moored in the water, shall in addition carry at each lower wing tip one light as specified in (a) of this paragraph.

The span of a flying machine shall be deemed to be the maximum lateral dimension.

12. In the event of the failure of any of the lights specified under these rules to be carried by aircraft flying at night, such aircraft shall land at the first reasonably safe opportunity.

13. Nothing in these rules shall interfere with the operation of any special rules made by the Government of any State with respect to the additional station or signal lights for two or more military aircraft, or for aircraft in formation, or with the exhibition of recognition signals adopted by owners of aircraft which have been authorised by their respective Governments and duly registered and published.

RULES AS TO SIGNALS—14 (a) Aircraft wishing to land at night on aerodromes having a ground control shall before landing:—

Fire a green Very's light or flash a green lamp, and in addition shall make by interna-

tional Morse code the letter-group forming its call-sign.

(b) Permission to land will be given by the repetition of the same call-sign from the ground, followed by:—

A green Very's light or flashing a green lamp.

15. The firing of a red Very's light or the display of a red flare from the ground shall be taken as an instruction that aircraft are not to land.

16. An aircraft compelled to land at night shall, before landing, fire a red Very's light or make a series of short flashes with the navigation lights.

17. When an aircraft is in distress and requires assistance, the following shall be the signals to be used or displayed, either together or separately:—

(a) The international signal, S O S, by means of visual or wireless signals.

(b) The international code flag signal of distress, indicated by NC.

(c) The distant signal, consisting of a square flag having either above or below a ball, or anything resembling a ball.

(d) A continuous sounding with any sound apparatus.

(e) A signal, consisting of a succession of white Very's lights fired at short intervals.

18. To warn an aircraft that it is in the vicinity of a prohibited zone and should change its course, the following signals shall be used:—

(a) By day: three discharges at intervals of 10 seconds, of a projectile showing, on bursting, white smoke, the location of the burst indicating the direction the aircraft should follow.

(b) By night: three discharges, at intervals of 10 seconds, of a projectile showing, on bursting, white stars, the location of the burst indicating the direction the aircraft should follow.

19. To require an aircraft to land, the following signals shall be used:—

(a) By day: three discharges, at intervals of 10 seconds, of a projectile showing on bursting black or yellow smoke.

(b) By night: three discharges, at intervals of 10 seconds, of a projectile showing on bursting red stars or lights.

In addition, when necessary to prevent the landing of aircraft other than the one ordered, a searchlight which shall be flashed intermittently shall be directed towards the aircraft whose landing is required.

20—(a) In the event of fog or mist rendering aerodromes invisible, their presence may be indicated by a balloon acting as an aerial buoy and of other approved means.

(b) In fog, mist, falling snow or heavy rain-storm, whether by day or night, an aircraft on the water shall make the following sound signals with a sound apparatus:—

(1) If not anchored or moored, a sound at intervals of not more than two minutes, consisting of two blasts of about five seconds' duration with an interval of about one second between them.

(2) If at anchor or moored, the rapid ringing of an efficient bell or gong for about five seconds at intervals of not more than one minute.

Rules of the Air

21. Flying machines shall always give way to balloons, fixed or free, and to airships. Air-

ships shall always give way to balloons, whether fixed or free.

22. An airship, when not under its own control, shall be classed as a free balloon.

23. Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing and angle of elevation of an approaching aircraft. If neither the bearing nor the angle of elevation appreciably change, such risk shall be deemed to exist.

24. The term "risk of collision" shall include risk of injury due to undue proximity of other aircraft. Every aircraft that is required by these rules to give way to another to avoid collision shall keep a safe distance, having regard to the circumstances of the case.

25. While observing the rules regarding risk of collision contained in paragraph 24, a motor-driven aircraft must always manœuvre according to the rules contained in the following paragraphs as soon as it is apparent that, if it pursued its course, it would pass at a distance of less than 200 metres from any part of another aircraft.

26. When two motor-driven aircraft are meeting end on, or nearly end on, each shall alter its course to the right.

27. When two motor-driven aircraft are on courses which cross, the aircraft which has the other on its own right side shall keep out of the way of the other.

28. An aircraft overtaking any other shall keep out of the way of the overtaken aircraft by altering its own course to the right, and must not pass by diving.

Every aircraft coming up with another aircraft from any direction more than 110 degs.

from ahead of the latter, i.e., in such a position with reference to the aircraft which it is overtaking that at night it would be unable to see either of that aircraft's side lights, shall be deemed to be an overtaking aircraft, and no subsequent alteration of the bearing between the two aircraft shall make the overtaking aircraft a crossing aircraft within the meaning of these rules, or relieve it of the duty of keeping clear of the overtaken aircraft until it is finally past and clear.

As by day the overtaking aircraft cannot always know with certainty whether it is forward or abaft the direction mentioned above from the other aircraft, it should, if in doubt, assume that it is an overtaking aircraft and keep out of the way.

29. Where by any of these rules one of the two aircraft is to keep out of the way, the other shall keep its course and speed. When, in consequence of thick weather or other causes, the aircraft having the right of way finds itself so close that collision cannot be avoided by the action of the giving-way aircraft alone, it shall take such action as will best aid to avert collision.

30. Every aircraft which is directed by these rules to keep out of the way of another aircraft shall, if the circumstances of the case admit, avoid crossing ahead of the other.

31. In following an officially recognised air route every aircraft, when it is safe and practicable, shall keep to the right side of such route.

32. All aircraft on land or sea about to ascend shall not attempt to "take-off" until there is no risk of collision with alighting aircraft.

33. Every aircraft in a cloud, fog, mist, or

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other conditions of bad visibility shall proceed with caution, having careful regard to the existing circumstances and conditions.

34. In obeying and construing these rules, due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

Ballast

35. The dropping of ballast other than fine sand or water from aircraft in the air is prohibited.

Rules for Air Traffic on and in the Vicinity of Aerodromes

36. At every aerodrome there shall be a flag hoisted in a prominent position which shall indicate that if an aircraft about to land or leave finds it necessary to make a circuit, or partial circuit, such circuit shall be left-handed (anti-clockwise) or right-handed (clockwise), according to the colour of the flag. A white flag shall indicate a right-handed circuit, i.e., that the flag is kept to the right side or side which carries the green light of the aircraft, and a red flag shall indicate a left-handed circuit, i.e., that the red flag is kept to the left side or side which carries the red light of the aircraft.

37. When an aeroplane starts from an aerodrome it shall not turn until 500 metres distance from the nearest point of the aerodrome, and the turning then must conform with the regulations provided in the preceding paragraph.

38. All aeroplanes flying between 500 and 1,000 metres distance from the nearest point of an aerodrome shall conform to the above-mentioned circuit law, unless such aeroplanes are flying at a greater height than 2,000 metres.

39. Acrobatic landings are prohibited at aerodromes of contracting States used for international aerial traffic. Aircraft are prohibited from engaging in aerial acrobatics within a distance of at least 2,000 metres from the nearest point of such aerodromes.

40. At every recognised aerodrome the direction of the wind shall be clearly indicated by one or more of the recognised methods, e.g., landing tee, conical steamer, smudge fire, etc.

Aerodrome Rules for Taking Off and Landing

41. Every aeroplane when taking off or alighting on a recognised aerodrome used for international air traffic shall do so up-wind, except when the natural conditions of the aerodrome do not permit.

42. In the case of aeroplanes approaching aerodromes for the purpose of landing, the aeroplanes flying at the greater height shall be responsible for avoiding the aeroplane at the lower height, and shall as regards landing observe the rules of paragraph 28 for passing.

43. Aeroplanes showing signals of distress shall be given free way in attempting to make a landing on an aerodrome.

44. Every aerodrome shall be considered to consist of three zones when looking up-wind. The right-hand zone shall be the taking-off zone, and the left-hand shall be the landing-

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zone. Between these there shall be a neutral zone. An aeroplane when landing should attempt to land as near as possible to the neutral zone, but in any case on the left of any aeroplanes which have already landed. After slowing up or coming to a stop at the end of its landing run, an aeroplane will immediately taxi into the neutral zone. Similarly, an aeroplane when taking off shall keep as far as possible towards the right of the taking-off zone, but shall keep clear to the left of any aeroplanes which are taking off or about to take off.

45. No aeroplane shall commence to take off until the preceding aeroplane is clear of the aeroplane.

Night Landings

46. The above rules shall apply equally to night landings on aerodromes, when the signals shall be as follows:

(a) A red light shall indicate a left-hand circuit, and a green light shall indicate a right-hand circuit (see paragraph 36). The right-hand zone will be marked by white lights placed in the position of an "L," and the left-hand zone will be similarly marked. The "L's" shall be back to back, that is to say, the long sides of the "L's" will indicate the borders of the neutral zone, the direction of landing shall invariably be along the long arm of the "L," and towards the short arm. The lights of the "L's" should be so placed that the lights indicating the top extremity of the long arm shall be the nearest point on the aerodrome upon which an aeroplane can safely touch ground. The lights indicating the short arm of the "L" should indicate the limit of safe landing ground for the

aeroplanes, that is, that the aeroplane should not over-run the short arm (see Diagram A).

Lighting for Aerodromes

(b) Where it is desired to save lights and personnel the following system may be used:—

Two lights shall be placed on the windward side of the aerodrome to mark the limits of the neutral zone mentioned in paragraph 44, the line joining the lights being at right angles to the direction of the wind. Two more lights shall be placed as follows: one on the leeward side of the aerodrome on the line drawn parallel to the direction of the wind and passing midway between the two lights on the windward side, to show the extent of the aerodrome and the direction of the wind, and the other shall be placed midway between the two lights marking the limits of the neutral zone (see Diagram B).

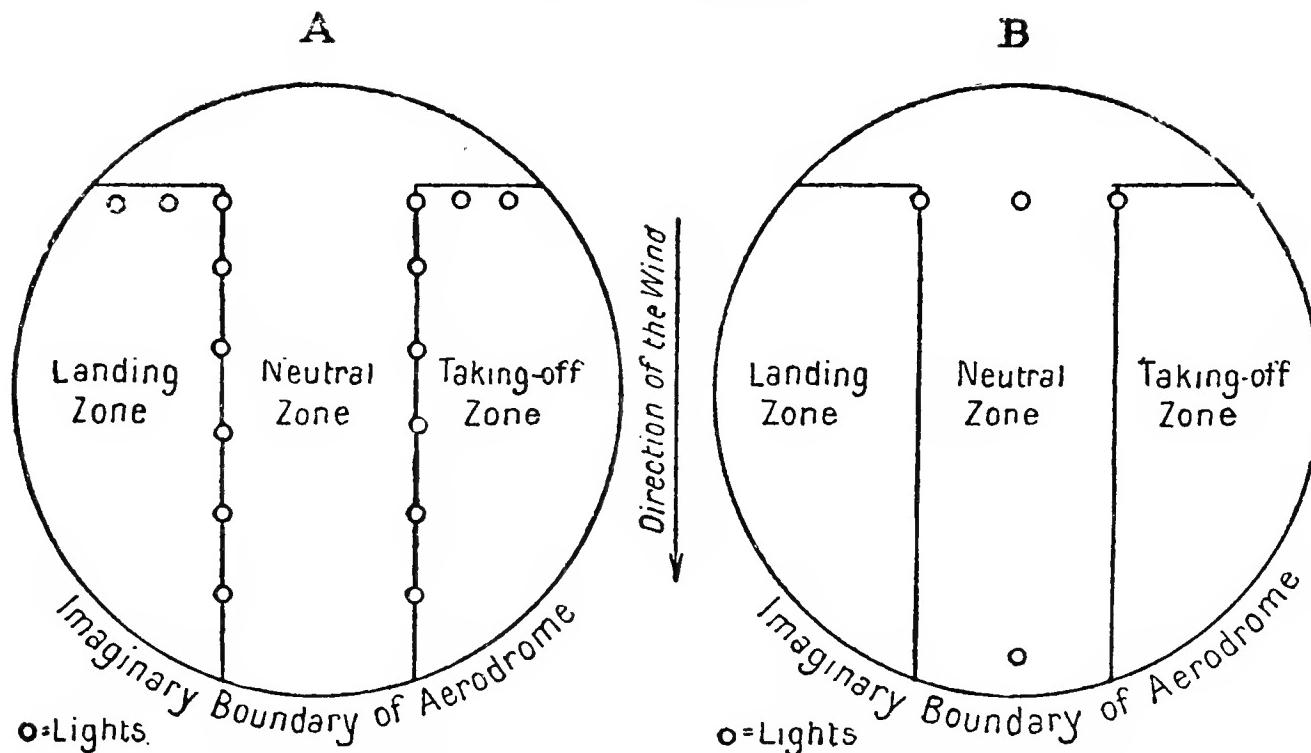
Additional lights may be symmetrically put along the boundary lines of the neutral zone, and on the ends of the taking-off and landing zones on the line through the three lights on the windward side.

47. No fixed balloon, kite, or moored airship shall be elevated in the vicinity of any aerodrome without a special authorisation, except in the cases provided for in paragraph 20.

48. Suitable markings shall be placed on all fixed obstacles dangerous to flying within a zone of 500 metres of all aerodromes.

General

49. Every aircraft manœuvring under its own power on the water shall conform to the Regulations for Preventing Collisions at Sea, and for the purposes of these regulations shall



be deemed to be a steam-vessel, but shall carry the lights specified in the preceding rules, and not those specified for steam-vessels in the Regulations for Preventing Collisions at Sea, and shall not use, except as specified in paragraphs 17 and 20 above, or be deemed to hear the sound signals specified in the above-mentioned Regulations.

50. Nothing in these rules shall exonerate any aircraft, or the owner, pilot or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of the air, or by the special circumstances of the case.

51. Nothing in these rules shall interfere with the operation of any special rule or rules duly made and published relative to navigation of air-

craft in the immediate vicinity of any aerodrome or other place, and it shall be obligatory on all owners, pilots, or crews of aircraft to obey such rules.

Annex E—Minimum Qualifications for Obtaining Certificates as Pilots and Navigators

CERTIFICATES FOR PILOTS OF FLYING MACHINES. (A) PRIVATE PILOT'S FLYING CERTIFICATE (not valid for purposes of public transport).

1. *Practical Tests*—In each practical test the candidate must be alone in the flying machine.

(a) *Test for Altitude and Gliding Flight*—A flight without landing, during which the pilot shall remain for at least an hour at a minimum altitude of 2,000 metres above the point of departure. The descent shall finish with a glide,

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the engines cut off at 1,500 metres above the landing ground. The landing shall be made without restarting the engine and within 150 metres or less of a point fixed beforehand by the official examiners of the test.

(b) *Tests of Skill*—A flight without landing around two posts (or buoys) situated 500 metres apart, making a series of five figure-of-eight turns, each turn reaching one of the two posts (or buoys). This flight shall be made at an altitude of not more than 200 metres above the ground (or water) without touching the ground (or water). The landing shall be effected by:—

(i) Finally shutting off the engine or engines at latest when the aircraft touches the ground (or water).

(ii) Finally stopping the flying machine within a distance of 50 metres from a point fixed by the candidate before starting.

2. *Special Requirements*—Knowledge of rules as to Lights and Signals, and Rules of the Air. Rules for Air Traffic on and in the vicinity of Aerodromes. A practical knowledge of international air legislation.

(B) PILOT'S FLYING CERTIFICATE FOR FLYING MACHINES USED FOR PURPOSES OF PUBLIC TRANSPORT.

1. *Practical Tests*—In each practical test the candidate must be alone in the flying machine.

(a) The tests for altitude and gliding flight and for skill are the same as those required for a private pilot's flying certificate. Candidates already in possession of the latter certificate are not required to pass these tests again.

(b) Test of endurance consisting of a cross-country or oversea flight of at least 300 kilome-

tres, after which the final landing shall be made at the point of departure. This flight shall be made in the same flying machine within eight hours. It shall include two obligatory landings (during which the machine must come to rest), which shall not be at the point of departure, but which shall be fixed by the judges.

At the time of departure the candidate shall be informed of his course and furnished with the appropriate map. The judges will decide whether the course has been correctly followed.

(c) *Night Flight*—A thirty minutes' flight made between two hours after sunset and two hours before sunrise, at a height of at least 500 metres.

2. *Technical Examination*—After satisfactory practical tests have been passed, candidates will, when summoned, submit themselves to examination on—

(a) *Flying Machines*—Theoretical knowledge of the resistance of the air as concerns its effect on wings and tail planes, rudders, elevators, and propellers; functions of the different parts of the machine and of their controls.

Assembling of flying machines and their different parts.

Practical tests on rigging.

(b) *Engines*—General knowledge of internal combustion engines, including functions of the various parts; a general knowledge of the construction, assembling, adjustment, and characteristics of aero-engines.

Causes of the faulty running of engines and of breakdown.

Practical tests in running repairs.

(c) *Special Requirements*—Knowledge of Rules as to Lights and Signals and Rules of the

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Air, and Rules for Air Traffic on and in the vicinity of Aerodromes.

Practical knowledge of the special conditions of air traffic and of international air legislation.

Map reading, orientation, location of position, elementary meteorology.

REMARKS—The practical tests shall be carried out within a maximum period of one month.

They may be carried out in any order, and each may be attempted twice. They shall be witnessed by properly accredited examiners, who will forward the official reports to the proper authorities.

The official reports will give the different incidents, especially those of landings. The candidates shall furnish before each test proper identity forms.

A barograph shall be carried on all practical tests, and the graph, signed by the examiners, shall be attached to their report.

Pilots who hold the military pilot's certificate shall be entitled to the private pilot's flying certificate, but, in order to obtain the pilot's flying certificate for purposes of public transport it will be necessary to pass the technical conditions for navigation as required by B (2) (c).

CERTIFICATES FOR PILOTS OF BALLOONS.

1. Practical Tests—The candidate must have completed the following certified ascents—

One by day; 3 ascents under instruction; 1 ascent in control under supervision; 1 ascent alone in the balloon.

Two by night; 1 ascent alone in the balloon.

Each ascent shall be of at least two hours' duration.

2. Theoretical Tests—Elementary aerostatics and meteorology.

3. Special Requirements—General knowledge of a balloon and its accessories, inflation, rigging, management of an ascent, instruments, precautions against cold and high altitudes.

Knowledge of Rules as to Lights and Signals and Rules of the Air, Rules for Air Traffic on and in the vicinity of aerodromes.

Practical knowledge of international air legislation. Map reading and orientation.

CERTIFICATES FOR AIRSHIP OFFICER PILOTS.

Every airship officer pilot shall have qualified as pilot of a free balloon.

There shall be three classes of airship officer pilots.

The holder of a second-class certificate is qualified to command any airship.

The holder of a second-class certificate is qualified to command airships under 20,000 cubic metres capacity.

The holder of a third-class certificate is qualified to command airships under 6,000 cubic metres capacity.

All military and naval airship officer pilots are entitled to a third-class certificate.

All military and naval airship officer pilots who have commanded airships over 6,000 cubic metres capacity are entitled to a first-class certificate.

QUALIFICATIONS FOR THIRD CLASS CERTIFICATE.

Practical Tests—(a) Twenty certified flights (three of which shall be by night) in an airship, each flight being of at least one hour's duration. In at least four of these flights the candidate must have handled the airship himself, under the supervision of the commanding officer of the airship, including ascent and landing.

(b) One cross-country flight on a predetermined course of at least 100 kilometres, terminating with a night landing, and made with a duly authorised inspector on board.

Theoretical Examination—Aerostatics and meteorology. (Density of gases, laws of Mariotte and of Gay-Lussac; barometric pressure, Archimedes principle, confinement of gases, interpretation and use of meteorological information and of weather charts.)

Physical and chemical properties of light gases, and of materials used in the construction of airships.

General theory of airships.

Dynamic properties of moving bodies in air.

General Knowledge—Elementary knowledge of internal combustion engines.

Elementary navigation, use of the compass, location of position.

Inflation, stowage, rigging, handling, controls and instruments.

QUALIFICATIONS FOR SECOND-CLASS CERTIFICATE.

Practical Tests—To be eligible for a second-class certificate a candidate must be holder of a third-class certificate and have at least four months' service as a third-class officer on an airship, and also have completed at least ten flights as third-class officer on an airship of capacity above 6,000 cubic metres, in which he has handled the airship himself, including ascent and landing, under the supervision of the commanding officer of the airship.

Theoretical Examination—Advanced knowledge of the subjects required for the third-class certificate.

QUALIFICATIONS FOR FIRST-CLASS CERTIFICATE.

Practical Tests—To be eligible for a first-class certificate a candidate must be holder of a second-class certificate, have at least two months' active service as a second-class officer on an airship, and also have completed at least five flights as second-class officer of an airship of capacity above 20,000 cubic metres, in which he has handled the airship himself, including ascent and landing, under the supervision of the commanding officer of the airship. Each flight must be at least of one hour's duration with a minimum of 15 hours for the five flights.

CERTIFICATE TO NAVIGATORS.

Theoretical Examination—As required for a second-class certificate.

Aircraft used for public transport carrying more than 10 passengers and having to make a continuous flight between two points more than 500 kilometres apart overland, or a night flight, or a flight between two points more than 200 kilometres apart over sea, must have on board a navigator who has been granted a certificate as such after passing a theoretical and practical examination in the following:—

1. *Practical Astronomy*—True and apparent movements of the celestial bodies. Different aspects of the celestial sphere.

Hour angles, mean, true, and astronomical time.

Shape and dimensions of the earth.

Star globes and maps.

Method of determining latitude, longitude, time and azimuth.

2. *Navigation*—Maps and charts—how to read them.

Compass, magnetic meridian, variation, deviation.

Courses, bearings, and their corrections.

Compensation of compasses (technical and practical).

Calculations of azimuth.

Flight by dead reckoning, measure of the relative speed, drift, traverse table.

Chronometer, chronometer rate, comparisons.

Sextants, adjustments.

Nautical almanac.

Determination of positions by means of bearing and altitude of stars.

Knowledge of great circle navigation.

Aeronautical navigational instruments.

3. General Knowledge—International rules for air and maritime navigation.

International air legislation.

Practical knowledge of meteorology and of weather charts.

Medical Certificates

International Medical Requirements for Air Navigation—**1.** Every candidate before obtaining a licence as a pilot, navigator or engineer of aircraft engaged in public transport will present himself for examination by specially qualified medical men (flight surgeons), appointed by or acting under the authority of the contracting State.

2. Medical supervision, both for the selection and the maintenance of efficiency, shall be based upon the following requirements of mental and physical fitness:—

(a) Good family and personal history, with particular reference to nervous stability. Ab-

sence of any mental, moral or physical defect which will interfere with flying efficiency.

(b) The minimum age for pilots and navigators engaged in public transport shall be nineteen (19) years.

(c) *General Surgical Examination*—The aeronaut must neither suffer from any wound, injury or operation nor possess any abnormality, congenital or otherwise, which will interfere with the efficient and safe handling of aircraft.

(d) *General Medical Examination*—The aeronaut must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys and nervous system capable of withstanding the effects of altitude and also the effects of prolonged flight.

(e) *Eye Examination*—The aeronaut must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two (2) dioptries of latent hypermetropia; muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye and must possess normal colour perception.

(f) *Ear Examination*—The middle ear must be healthy. The aeronaut must possess a degree of auditory acuity compatible with the efficient performance of his duties.

(g) The vestibular mechanism must be intact and neither unduly hypersensitive or hyposensitive.

(h) *Nose and Throat Examination*—The aeronaut must possess free nasal air entry on either side and not suffer from serious acute or

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chronic affections of the upper respiratory tract.

3. Each contracting State shall for the present fix its own methods of examination until the detail of tests and the minimal standard of requirements have been finally settled by the authorised medical representatives of the International Commission for Air Navigation.

4. The successful candidate will receive a medical certificate of acceptance, which must be produced before the licence can be issued.

5. In order to insure the maintenance of efficiency, every aeronaut shall be re-examined periodically, at least every six months, and the findings shall be attached to his original record. In case of illness or accident also, the aeronaut shall be re-examined and pronounced fit before resuming air duties. The date and result of each re-examination shall be recorded on the aeronaut's flying certificate.

6. No aeronaut who, before the date of the present Convention, has given proof of his flying ability, shall, so long as he retains such ability, be necessarily disqualified because he fails to fulfil all of the above requirements.

7. Each contracting State may raise the conditions set forth above, as it deems fit, but these minimal requirements shall be maintained internationally.

Annex F—International Aeronautical Maps and Ground Markings

International maps shall be made and ground marks established in accordance with the following general principles:—

MAPS—1. Two types of aeronautical maps shall be used. They are hereafter mentioned as *general* maps and *local* maps.

2. The index scheme for the aeronautical maps, both general and local, shall be based on the index scheme adopted for the "International 1: 1,000,000 scale map" by the official International Congress convened for the purpose in London in 1909 and in Paris in 1913.

Note—Extract from the resolutions adopted by the Conferences at London and Paris:

The sheets of the International 1: 1,000,000 scale map shall include 6 degs. of longitude and 4 degs. of latitude. The limiting meridians of the sheets shall be at successive intervals, reckoning from Greenwich, of 6 degs., and the limiting parallels, reckoning from the Equator, shall be at successive intervals of 4 degs.

The longitudinal sectors, from longitude 180 degs. E. or W. of Greenwich, are given numbers from 1 to 60, increasing in an easterly direction.

The 22 zones of 4 degs. in depth, extending from the Equator on each side to 88 degs. latitude, are given letters from A to V.

The polar areas, extending for 2 degs., are lettered Z.

In the northern hemisphere each sheet shall bear a descriptive symbol composed of the letter N, followed by the zone letter and sector number corresponding to its position, thus N.K.—12.

In the southern hemisphere the letter S shall replace the letter N. Example, S.L.—28.

3. The metre shall be used as the standard of measurement for lengths, distances, heights and

depths, reserving for each nation the right to add figures expressing these quantities in its own units.

4. The colours, symbols, and arrangements for production adopted for the International 1: 1,000,000 scale map shall be used as far as practicable on the aeronautical maps.

5. The general maps shall be drawn on Mercator's projection and shall be to a scale of 1 deg. of longitude equals 3 centimetres. The general maps shall have marked on them in fine lines the meridians and parallels of each degree, and the meridians and parallels limiting the unit sections of the 1: 1,000,000 map shall be accentuated. The same designation of unit sections shall be used as for the 1: 1,000,000 map.

6. Each general (Mercator) map shall bear the French heading *Carte Générale Aéronautique Internationale* (see the conventional sign plate, Fig. 1.), and under it a translation of this heading in the language of the country publishing the map. It shall also bear an appropriate geographical name.

Each sheet shall show at least the following: principal physical features and geographical names, wireless stations, marine lighthouses (height and range at sea level, colour and character of the light); national frontiers, prohibited areas, principal air routes, lines of equal magnetic variation, South Polar distance, latitude, old and new notation of longitude (see paragraph 7), with an outer margin containing letters and numbers referring to the index of the 1: 1,000,000 map, legend of symbols in English or French and in the language of the country publishing the maps, publisher's name, and date of publication and of successive editions.

7. The local maps shall be drawn to a scale of 1: 200,000.

Note—For local aeronautical maps of sparsely inhabited countries, the scale of 1: 500,000 or 1: 1,000,000 as appropriate, may be used.

In addition to the customary latitude and longitude notations, the local aeronautical maps shall bear numbers enclosed in rectangles, corresponding to a new system of co-ordinate reckoning based on the antimeridian of Greenwich and the South Pole. The new *grid* reckoning, with regard to latitude, shall commence with the South Pole as zero and increase northward by degrees and minutes to 180 degs. at the North Pole, and with regard to longitude shall commence with the antimeridian of Greenwich as zero and run eastward by degrees and minutes to 360 degs.

8. Each unit sheet of the local aeronautical maps shall bear the French heading *Carte Normale Aéronautique Internationale* (see the conventional sign plate, Fig. 2), and under it a translation of this heading in the language of the country publishing the map. It shall comprise one degree of latitude and one degree of longitude, and shall be designated by a locality name and by the new co-ordinates (described in paragraph 7) on the south-west corner of the sheet, the unit digits being accentuated. In these designating co-ordinates, the figures referring to the South Polar distance shall invariably be written first.

Examples—The sheet whose southern boundary is 49 degs. N. (i.e., 139 degs. South

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Polar distance) and western boundary 2 degs. E. (i.e., 182 degs. from the antimeridian of Greenwich) will be numbered 139-182.

Or the sheet whose southern boundary is 36 degs. S. (i.e., 54 degs. South Polar distance) and western boundary 7 degs. W. (i.e., 173 degs. from the antimeridian of Greenwich) will be numbered 54-173.

9. The local aeronautical unit sheets shall show, as far as the data is known, the following:—

(a) *Within the limiting Meridians and Parallels*—Twenty-minute projection grid: roads divided into two classes according to their relative visibility from the air; railways of all kinds, cities and towns in outline and the plan of the principal public roads crossing them (villages similarly if practicable, otherwise their positions indicated); principal features of the surface water system; woodlands and other areas unsuitable for landing, aerodromes, hangars for airships, plants for balloon inflation, permanent landing places on ground and water, aeronautical ground marks, (beacons and fixed navigational lights), marine lighthouses (height, range at sea level, colour and character of the light); wireless stations, meteorological stations, overhead electric power lines, remarkable objects, national frontiers, prohibited areas, principal air routes, names of important bodies of water, towns, and important villages; the topographical relief by shading and figures indicating heights, the most important of which to be surrounded by an oval

ring as

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(b) *Outside the limiting Meridians and Parallels*—A tile, consisting of the name designating the locality and the index numbers of the sheet; a border scale graduated to minutes; the names of the neighbouring sheets; latitude, South Polar distance, old and new notation of longitude (*see paragraph 7*); scale of kilometres; legend of symbols in English or French and in the language of the country publishing the map; magnetic variation diagram; key map showing abridged numbers of the sheet concerned and the eight surrounding sheets; frontiers and the names of the countries, parts of which are embraced by the key map; publisher's name and date of publication.

10. The forms of the general and local maps, titles, marginal notations, diagrams, and legends, shall be as shown by the accompanying illustration.

11. The general and local aeronautical maps and guide books of the areas traversed by the most important routes which may be established by international agreement shall be prepared first.

Note—On account of the inadequacy of the usual methods of topographic mapping for making aeronautical maps, it is strongly recommended that steps be taken to survey from the air the areas along the most important international routes. Such surveys would furnish indispensable information regarding the features necessary to be shown on the maps the aviator is to use.

UNIVERSAL SYSTEM OF GROUND MARKS—1.

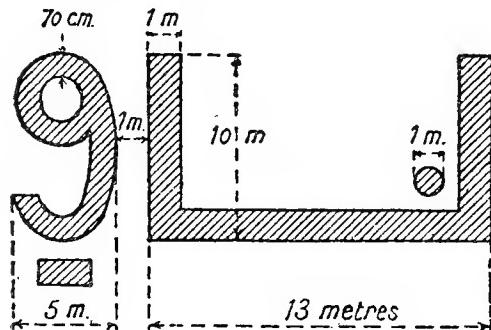
All ground marks shall conform with the

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scheme of numbering adopted for the unit sheets of the local international aeronautical maps.

For this purpose each mark shall show (*see diagrams*) :—

- (a) The abridged number which designates the sheet within which it lies;
- (b) An open rectangle, whose short sides shall be oriented north-south; the frames shall be open towards the opposite half of the unit sheet;
- (c) A dot indicating the approximate position of the mark on the north or south half of the corresponding unit sheet.



Arrangement of mark for south half of unit sheet.
The short sides of the frame shall be oriented true north-south.

The numbers shall be placed close to the frame at the top, bottom or sides, but not inside.

Where marks are placed so close to each other as to admit of possible confusion, the round dot may be replaced by a square, triangular or star-shaped dot.

It is recommended that the minimum dimensions of the marks be those indicated in the sketches.

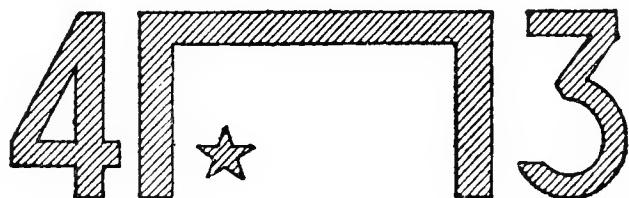
2. Special attention shall be given to the distribution of marks along chosen international routes.

Note—Steps to establish suitable marks for landing at night shall be eventually taken, in accordance with the decision of the International Commission for Air Navigation.

Annex G—Collection and Dissemination of Meteorological Information

1. Nature and object of meteorological information to be furnished by Contracting States:—

(A) “Statistical” is required for the purpose of indicating the degree of safety and conven-



Arrangement of mark for north half of unit sheet having the same orientation of short sides.

ience of different routes or aerodromes for different types of aircraft.

It consists of:—

(a) Analysis and summaries of past meteorological records.

(b) Summaries of current observations.

(B) “Current” is required for the purpose of:—

(a) Keeping a current record of the weather.

(b) Making forecasts.

It consists of:—

1. The results of daily observations.

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2. Lists of active stations at which these observations are taken.

(C) "Forecasts" are for the purpose of telling all concerned when and where flying is possible and the best conditions for the same. They are statements of conditions anticipated:—

(a) "Short period" during the next three or four hours.

(b) "Normal" during the next twenty to thirty hours.

(c) "Long period" during the next two or three days.

(d) "Route" for particular region or route during the next six hours.

2. Methods and times of furnishing the different types of information:—

(A) "Statistical" is furnished by Central Meteorological Offices for general information.

(a) Analysis and summaries of past records—by the publication of special handbooks giving averages, frequencies and extremes of the principal meteorological elements, together with charts and diagrams; prominence to be given to meteorological conditions of areas known to have special meteorological peculiarities.

(b) Summaries of current observations—by the monthly publication of the information obtained each month.

(B) "Current" is furnished by meteorological offices to meteorological offices.

(a) Results of daily observations—telegraphically by:—

1. Regular reports at fixed hours (*see Appendix I*) and

2. By special reports at intermediate times when requested (*see Appendix II*).

(b) Lists of stations whenever necessary, to keep other countries informed where observations are being taken, giving also local and topographical details affecting weather conditions at each station.

(c) "Forecasts" are furnished by meteorological offices for general information by publication in the public Press, telegraphically to other countries if required, or any other, the best, means to bring them to the notice of those requiring them (*see Appendix III*).

Appendix I—Regular Reports

These are of two kinds:—

1. Individual station reports.
2. Collective station reports.

1. Individual station reports are the results of observations of individual stations, taken at 0100, 0700, 1300, and (1800 or) 1900 G.M.T. The reports are made as soon as the observation has been taken and are rendered to a central collecting station or office; where reports for only two of these hours are possible or sufficient, the hours should be separated by an interval of twelve hours. (It is recommended that the standard hours be changed to 0300, 0900, 1500 and 2100 G.M.T. by international agreement.)

Reports will give information on the following, whenever possible:—

1. Wind.
2. Pressure.
3. Temperature and humidity.
4. Fog and visibility.
5. Clouds.
6. Precipitation.

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7. Thunderstorms, hurricanes, tornadoes, dust-storms.

8. Other weather phenomena.

9. State of sea,

and also on upper air currents and upper air temperature and humidity, from stations where facilities are available for observation.

Reports will be made in the general form and in the codes given in Appendix IV.

2. Collective reports are a collection of the individual reports received by a central station or office and transmitted to other central offices. They are of three classes:—

Class 1—The central office in this case is usually the main office of a country; it transmits its reports, within $1\frac{1}{2}$ hours of the time the observations are taken at the individual stations, to all main offices of other countries within a radius of 1,500 kilometres.

Class 2—These are reports made for the purpose of giving countries over 1,500 kilometres distant information essential to making their own forecasts. The central office is that of a selected State which possesses a high-power wireless station capable of worldwide ranges (minimum range 3,000 kilometres). The report is made within three hours of the observations, and is a collection of reports selected from the Class 1 reports and abridged (*see Appendix IV*). It should include a forecast of conditions in the country of origin.

Class 3—These are local reports made by local centres to other local centres (any within 500 kilometres). The report is a collection of reports, selected from the Class 1 reports from stations in the vicinity and abridged (*see Ap-*

pendix IV). It is made within thirty minutes of the time of observation.

Appendix II—Special Reports

Special reports give the results of continuous observations at aerodromes having meteorological stations on recognised air routes. They are to be rendered within thirty minutes of a request from a central office or a specified aerodrome on the route. The maximum distance from which these reports will be required is 500 kilometres. The requests may take the form of a demand for hourly reports.

The reports are rendered by telephone or wireless, and may be from one country to another in the case of an international air route. The reports when made by telegram will be in the form and code given in Appendix IV.

Appendix III—Forecasts

Short-period forecasts covering three to four hours will give a statement of the anticipated conditions of cloud, weather, surface wind and visibility, together with direction and speed of wind at heights of 1,000 and 2,000 metres, and an estimate of meteorological fitness for different types of aircraft.

Normal forecasts for twenty or thirty hours will give similar information, but in more general terms.

Long-period forecasts give a general statement of the prospects for the next two or three days.

Route forecasts are made twice daily by central offices from information received from individual stations and will give a statement of conditions anticipated in the different regions

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or routes of the country for about six hours ahead.

Appendix IV—General Form in which Reports are to be Rendered and Codes for their Transmission

Individual stations will be allotted station call signs—i.e., an index group of letters or figures which will be used in all reports to indicate the station, and will also serve as the wireless call sign. These should be internationally distinct.

The general form is given in meteorological symbols or letters. For purposes of transmission an appropriate figure value is given to each symbol or letter in accordance with the codes given below.

METEOROLOGICAL SYMBOLS OR LETTERS AND THEIR SIGNIFICATION.

Standard symbols.

BBB = barometer reduced to sea level and expressed in millibars and tenths—i.e., corrected for temperature gravity and index error. The initial 9 or 10 is omitted.

DD = direction of wind (true direction as distinguished from magnetic) at a height of 10-15 metres above the surface expressed on scale 1-72 (*see Code XI*).

F = force of wind on Beaufort scale (wind above force 9 to be specially noted at end of telegram).

ww = present weather (Code I).

TT = temperature in degrees A (${}^{\circ}\text{A} = -273^{\circ}\text{ C}$, $273^{\circ}\text{ A} = {}^{\circ}\text{C}$), first figure omitted.

A = form of low cloud (Code III).

L = amount of low cloud (in tenths of sky covered, amount 10 telegraphed at 0).

B = form of medium or high cloud (Code III).

M = amount of medium or high cloud in tenths.

h = height of base of low cloud (Code IV (a)).

WW = past weather (Code II).

V = visibility (Code V).

H₁ = relative humidity (Code VI).

S = State of sea (Code VII).

β = characteristic of barometric tendency (Code IX).

bb = amount of barometric tendency in half millibars per 3 hours; 50 added for negative tendencies.

F₁ — fitness of weather conditions for flying machines (Code VIII (a)).

F₂ = fitness of weather conditions for airships (Code VIII (b)).

RR = rainfall; (i) in day; (ii) in night; in millimetres and tenths.

MM = maximum temperature in the day.

mm = maximum temperature in the night.

X = reserve figure.

SPECIAL SYMBOLS FOR UPPER AIR CURRENTS.

H = height (Code IV (b)).

DD = direction on scale 1-72—i.e., to nearest 5 degs. (*see Code XI*).

VV = speed in kilometres per hour (for speed above 99 K/hr. use three figures).

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SPECIAL SYMBOLS FOR UPPER AIR TEMPERATURE
AND HUMIDITY.

p = height or pressure (Code IV (c)).

HH = actual percentage of relative humidity.

SPECIAL SYMBOL FOR COLLECTIVE REPORTS.

CLASS 2.

BB = barometer in whole millibars with the initial 9 or 10 omitted.

GENERAL FORMS OF MESSAGES IN METEOROLOGI-CAL SYMBOLS.

REGULAR REPORTS—1. *Individual Station Reports*—Station call sign followed by the following groups:—

BBBDD. FwwTT. ALBMh.
wwVHS. β bbF₁F₂. RRMMX (or RRmmX).

Additional two groups for reports from Stations having facilities for observations of upper air currents; the first of these being:—

A five-figure group to indicate that upper air current information is contained in the group which follows and which has the general form HDDVV.

Additional two groups for reports from stations having facilities for observations of upper air temperature and humidity; the first of these being:—

A five-figure group to indicate that upper air temperature and humidity information is contained in the group which follows and which has the general form ρ TTHH.

(NOTE.—These indicative five-figure groups would be better, from a signalling point of view, as a special Morse signal.)

2. *Collective Station Report, Class 1*—The individual station reports are given in sequence in the same general form as above. Upper air conditions are given at the end for those stations for which available; upper air currents being given only for the following heights, 500, 1,000, 2,000, 5,000 metres (*see Code IV (b)*).

Example of general form of collective report (Class I) giving information from four stations, A, B, C, D, of which stations B, C have given upper air currents, and stations B, D upper air temperatures and humidity.

Call sign for "A"—BBBDD—FwwTT—

Call sign for "A"—BBBDD—FwwTT
—ALBMh—wwVHS— β bbF₁F₂

Call sign for "B"—BBBDD—FwwTT
—ALBMh—wwVHS— β bbF₁F₂

Call sign for "C"—BBBDD—FwwTT
—ALBMh—wwVHS— β bbF₁F₂

Call sign for "D"—BBBDD—FwwTT
—ALBMh—wwVHS— β bbF₁F₂

Group or signal indicating that upper air current information follows.

Call sign for "B"—HDDVV.

Call sign for "C"—HDDVV.

Group indicating that upper air temperature and humidity information follows.

Call sign for "B"— ρ TTHH.

Call sign for "D"— ρ TTHH.

3. *Collective Station Reports, Class 2*—The individual station reports are given in sequence in an abridged form, as follows: Call sign for station—BBDDF—wwTTh—AL β bb.

Upper air currents are given at the end of the telegram for heights 2,000 and 5,000 metres for selected stations.

Notes

Example of general form of collective report (Class 2) giving information from four stations A, B, C, D, of which stations "B," "C," are selected for upper air current conditions.

Call sign for "A"—BBDDF—wwTTh—AL β bb.

Call sign for "B"—BBDDF—wwTTh—AL β bb.

Call sign for "C"—BBDDF—wwTTh—AL β bb.

Call sign for "D"—BBDDF—wwTTh—AL β bb.

Group indicating that upper air current information follows.

Call sign for "B"—HDDVV.

Call sign for "C"—HDDVV.

Forecast of conditions in country of origin.

4. *Collective Station Reports, Class 3*—The individual station reports are given in sequence in an abridged form as follows:—

Call sign of station DDFF₁F₂—ALBMh—wwWWV.

Note 1—The general form for transmission "of special reports" and for forecasts has not yet been formulated.

Note 2—Observations from ships at sea and the transmission of such observations require special arrangements which it has not yet been found possible to formulate. Similarly for observation from aircraft and their transmission.

CODES

Code I—Present Weather—ww

Note.—00 to 49 weather without precipitation.
50 to 70 and 77 to 97 with precipitation

In Codes I and II, r = rain, d = drizzle, h = hail, s = snow, rs = sleet, tlr = thunderstorm, e = wet air, f = fog (see Code V)

<i>No Mist or Fog</i>		<i>Precipitation and Fog (50-58)</i>
00	Absolutely cloudless	50 Slight r
01	Cloud less than $\frac{1}{2}$.	51 Moderate r } 2f. or 3f.
02	About $\frac{1}{2}$ clouded.	52 Heavy r }
03	About $\frac{3}{4}$ clouded.	53 Slight r }
04	Overcast, but small amount of blue visible.	54 Moderate r } 4f. or 5f.
05	Absolutely overcast.	55 Heavy r }
		56 Slight r }
		57 Moderate r } 6f. to 8f.
		58 Heavy r }
<i>Haze, Mist or Fog, but no precipitation</i>		<i>Precipitation and Squalls of Wind (59-70)</i>
06	Overcast and 1f.	59 Slight r.
07	Overcast and 2f.	60 Moderate r.
08	Overcast and 3f.	61 Heavy r.
09	Overcast and 4f.	62 Slight h.
10	Overcast and 5f.	63 Moderate r and h.
11	Overcast and 6f.	64 Heavy r and h.
12	Overcast and 7f.	65 Slight rs.
13	Overcast and 8f.	66 Moderate rs.
14	Haze 1f.	67 Heavy rs.
15	Haze 2f.	68 Slight s.
16	Fog 3f.	69 Moderate s.
17	Fog 4f.	70 Heavy s.
18	Fog 5f.	
19	Fog 6f.	
20	Fog 7f.	
21	Fog 8f.	
22	Mist 1fe.	
23	Mist 2fe.	
24	Fog 3fe.	
25	Fog 4fe.	
26	Fog 5fe.	
27	Fog 6fe.	
28	Fog 7 fe.	
29	Fog 8fe.	
<i>Snow Covering</i>		<i>Precipitation (77-97)</i>
71	s over whole country.	77 Slight d.
72	s with bare patches.	78 Moderate d.
73	Deep drifts.	79 Thick d.
74		80 Slight r.
75		81 Moderate r.
76		82 Heavy r.
		83 Slight h.
		84 Moderate h.
		85 Heavy h.
		86 Slight rs.
		87 Moderate rs.
		88 Heavy rs.
		89 Slight s.
		90 Moderate s.
		91 Heavy s.
		92 Slight tlr } Without hail
		93 Moderate tlr }
		94 Heavy tlr }
		95 Slight tlr }
		96 Moderate tlr } With hail.
		97 Heavy tlr }
		98 Reserve figures.
		99 Reserve figures.

Notes

TEXTBOOK OF AERIAL LAWS

Code II—Past Weather—WW

Note—00–49 Weather without precipitation

50–97 Weather with precipitation

No Precipitation or Fog (00–14)	37 Glazed roads. 38 Solar halo. 39 Lunar halo. 40 Solar corona. 41 Lunar corona.
00 equals Cloudless.	42 Aurora.
02 equals b and bc; med. or high cloud.	43 Squalls.
03 equals b and c; mixed cloud.	44 Gale.
04 equals bc and c; med. or high cloud.	45 Gloom.
05 equals bc and c; low cloud.	46 Ugly; threatening.
03 equals bc and c; mixed cloud.	47 Thunder.
07 equals c and o; med. or high cloud.	48 Lightning.
08 equals c and o; low cloud.	49 Thunder and Lightning.

*Precipitation
Passing Showers (50–61)*

Overcast with blue patches (10–12)	50 of slight 51 of moderate 52 of heavy	rain
10 equals med. or high cloud.	53 of slight 54 of moderate	hail or r and h
11 equals low cloud.	55 of heavy	
12 equals mixed cloud.	56 of slight	
13 equals completely overcast; low or mixed cloud.	57 of moderate 58 of heavy	rs or r and rs.
14 equals b and o; low or mixed cloud.	59 of slight 60 of moderate	snow
Fog with Cloud above (15–19)	61 of heavy	

*Occasional Precipitation
(62–76)*

Haze or Fog (20–24)	62 occasional slight d. 63 occasional moderate d. 64 occasional thick d. 65 occasional slight r. 66 occasional moderate r. 67 occasional heavy r. 68 occasional slight r and h. 69 occasional moderate r and h. 70 occasional heavy r and h. 71 occasional slight s. 72 occasional moderate s. 73 occasional heavy s. 74 occasional slight s. 75 occasional moderate s. 76 occasional heavy s.
Wet Fog or Mist (25–29)	
25 equals Mist 1fe.	77 slight
26 equals Mist 2fe.	78 moderate
27 equals Fog 3fe.	79 thick
28 equals Fog 4fe. or 5fe.	80 slight
29 equals Fog 6fe. to 8fe.	81 moderate

Special Phenomena without Precipitation (30–49)

30 equals e (wet air).	82 heavy	Continous or nearly Continous Precipitation (77–91)
31 Exceptional visibility.		
32 Dust haze.	drizzle.	
33 Dew.		
34 Hoar frost.		
35 Rime.		
36 Glazed frost.		

83 slight	r and hail.	Thunderstorms (92–97)
84 moderate		
85 heavy		92 slight tlr
86 slight	rs or r and rs.	93 moderate tlr
87 moderate		
88 heavy		94 heavy tlr
89 slight	snow.	95 slight tlr
90 moderate		
91 heavy		96 moderate tlr
		97 heavy tlr
		98 Reserve numbers.
		99 }

*Code III—Form of Cloud**Low Cloud—A**Medium or High Cloud—B*

Low Cloud: 1 equals Fracto Cumulus.
2 equals Mammato Cumulus.
3 equals Low Strato Cumulus (below 1200 m.).
4 equals High Strato Cumulus (above 1200 m.).
5 equals Nimbus.
6 equals Cumulus.
7 equals Cumulo Nimbus.
8 equals Stratus.
High Cloud: 1 equals Cirrus.
2 equals Cirro Stratus.
3 equals Cirro Cumulus.
4 equals False Cirrus.
Medium Cloud: 5 equals Thin Alto Stratus (Sun or Moon visible).
6 equals Thick Alto Stratus.
7 equals Alto Cumulus (low) (below 3 km.).
8 equals Alto Cumulus (high) (above 3 km.).

*Code IV (a), (b), (c)—Heights and Pressures of Upper Air Reports**Code IV (a)—Height of base of Low Cloud—h*

metres	1 equals 200 metres
0 equals cloud below 150	2 equals 200 metres
1 equals cloud below 150–300	3 equals 1,000 metres
2 equals cloud below 300–500	4 equals 1,500 metres
3 equals cloud below 500–750	5 equals 2,000 metres
4 equals cloud below 750–1,000	6 equals 3,000 metres
5 equals cloud below 1,000–1,500	7 equals 4,000 metres
6 equals cloud below 1,500–2,000	8 equals 5,000 metres
7 equals cloud below 2,000–2,500	
8 equals cloud below 2,500–3,000	
9 equals no low cloud.	

*Code IV (b)—Height of Upper Wind—H**Code IV (c)—Height or Pressure to which Temperature and Humidity Values refer—p*

0 equals surface.	5 equals pressure of 850 mb.
1 equals 300 metres above surface.	6 equals pressure of 800 mb.
2 equals pressure of 1,000 mb.	7 equals pressure of 750 mb.
3 equals pressure of 950 mb.	8 equals pressure of 700 mb.
4 equals pressure of 900 mb.	9 equals pressure of 600 mb.

Notes

C.A. Form 8.

AIR MINISTRY.

Air Navigation Acts, 1911 to 1919

Name Hubert Stanford Broad.
 Address Earlsgate, Watford.
 Nationality British.

Is hereby licensed as Pilot [of aircraft carrying passengers or goods for hire or reward] of the Aero 504K

class of aircraft

for a period of six months from the Fourteenth day of June 1919 to the Thirteenth day of December 1919.

inclusive, subject to the Orders made by the Secretary of State under the Air Navigation Acts 1911 to 1919.

[Handwritten signature]

Air Ministry,
 London, W.C. 2.

[Handwritten signature]
 Secretary of the Air Council.



AIR MINISTRY

PHOTOGRAPH OF HOLDER.

Signature of holder H.S. Broad

N.B.—This licensee is not transferable nor can it be used for any class or classes of aircraft other than the class or classes specified herein.

Reproduction of license issued to aviators and pilots of aircraft by the British Air Ministry. While modifications of the regulations under which the first licenses were issued are being made from time to time, and the first regulations have been proven extremely restricted, the general principle of licensing air pilots has proven a helpful factor in public aerial navigation just as the issuing of pilots' certificates under the rules of the International Aeronautic Federation for sporting events and contests, since 1905, has proven a helpful factor in governing aerial contests.



How a third person can be smuggled in an apparent two-seater aeroplane. The type shown herewith is a Breguet aerial touring plane, equipped for overnight travel with upper and lower berths.



Checking the cargo of an aeroplane at an aerodrome to comply with the custom laws and prevent smuggling.

Code V—Surface Visibility and Fog—V

0 less than 25 metres	8 f	4 2,000 metres	2 f or 3 V
25 metres	7 f	5 4,000 metres	2 f or 4 V
1 50 metres	6 f	6 7,000 metres	1 f or 5 V
100 metres	5 f	7 12,000 metres	1 f or 6 V
2 200 metres	4 f	8 20,000 metres	7 V
500 metres	3 f or 1 V	30,000 metres	8 V
3 1,000 metres	3 f or 2 V	9 above 30,000 and clear air	9 V

Code VI—Relative Humidity—H

0 equals 95—100 per cent.	5 equals 50—59 per cent.
9 equals 90—94 per cent.	4 equals 40—49 per cent.
8 equals 80—89 per cent.	3 equals 30—39 per cent.
7 equals 70—79 per cent.	2 equals 20—29 per cent.
6 equals 60—69 per cent.	1 equals 10—19 per cent.

Code VII—State of Sea—S

0 equals Calm—glassy.	6 equals Rough—deeply furrowed.
1 equals Very smooth—slightly rippled.	7 equals High rollers, steep fronts.
2 equals Smooth—rippled.	8 equals Very high rollers, steep fronts.
3 equals Slight—rocks buoy.	9 equals Phenomenal—precipitous.
4 equals Moderate furrowed.	
5 equals Rather rough—much furrowed.	

*Code VIII (a) and (b)—Fitness for Flying**Code VIII (a) Fitness for Aeroplanes*

0 equals entirely unfit: fog.	0 equals entirely unfit: fog.
1 equals entirely unfit: rain and low cloud.	1 equals entirely unfit: rain, wind and low cloud.
2 equals entirely unfit: gales.	2 equals entirely unfit: gales.
3 equals very risky: mist.	3 equals very risky: high wind.
4 equals very risky: wind and weather.	4 equals very risky: occasional squalls.
5 equals risky: mist.	5 equals risky: strong wind.
6 equals risky: wind, weather.	6 equals risky: slight squalls.
7 equals fit.	7 equals fit.
8 equals very fit.	8 equals very fit.
9 equals perfect.	9 equals perfect.

Code IX—Characteristic of Barometric Tendency—B

0 equals steady.	6 equals steady, then falling.
1 equals unsteady.	7 equals falling, now steady.
2 equals rising.	8 equals rising, now steady or falling.
3 equals falling.	9 equals line squall; sudden rise with marked change of wind and weather.
4 equals falling, then rising.	
5 equals steady, then rising.	

Code X—Direction of Wind—DD

Direction is specified to the nearest 5 degrees by use of the numbers 1—72. The numbers corresponding with the usual "even" points of the old telegraphic scale are as follows:

04 equals NNE.	63 equals NW.
09 equals NE.	67 equals NNW.
13 equals ENE.	72 equals North.
18 equals East.	To express directions calculated in degrees in this scale, divide the number of degrees by 5 (or multiply by 2 and divide by 10).
22 equals ESE.	
27 equals SE.	
31 equals SSE.	
36 equals South.	
e.g., 17 degrees equals 03; 53 degrees equals 11; 257 degrees equals 51; 313 degrees equals 63.	

Annex H—Customs**General Provisions**

1. Any aircraft going abroad shall depart only from aerodromes specially designated by the customs administration of each contracting State, and named "customs aerodromes."

Aircraft coming from abroad shall land only in such aerodromes.

2. Every aircraft which passes from one State into another is obliged to cross the frontier between certain points fixed by the contracting States. These points are shown on the aeronautical maps.

3. All necessary information concerning customs aerodromes within a State, including any alterations made to the list and any corresponding alterations necessary on the aeronautical maps and the dates when such alterations become valid, and all other information concerning any international aerodromes which may be established, shall be communicated by the States concerned to each other and to the International Commission for Air Navigation, which shall notify such information to all of the contracting States. The contracting States may agree to establish international aerodromes at which there may be joint customs services for two or more States.

4. When, by reason of a case of force ma-

Notes

jeure, which must be duly justified, an aircraft crosses the frontier at any other point than those designated, it shall land at the nearest customs aerodrome on its route. If it is forced to land before reaching this aerodrome it shall inform the nearest police or customs authorities.

It will only be permitted to leave again with the authorisation of these authorities, who shall, after verification, stamp the log book and the manifest provided for in paragraph 5; they shall inform the pilot of the customs aerodrome where he must necessarily carry out the formalities of customs clearance.

5. Before departure, or immediately after arrival, according to whether they are going or coming back from a foreign country, pilots shall show their log books to the authorities of the aerodrome and, if necessary, the manifest of the goods and supplies for the journey which they carry.

6. The manifest is to be kept in conformity with the attached form No. 1.

The goods must be the subject of detailed declarations in conformity with the attached form No. 2, made out by the senders.

Every contracting State has the right to prescribe for the insertion either on the manifest or on the customs declaration of such supplementary entries as it may deem necessary.

7. In the case of an aircraft transporting goods the customs officer, before departure, shall examine the manifest and declarations, make the prescribed verifications and sign the log book as well as the manifest. He shall verify his signature with a stamp. He shall seal the goods or sets of goods, for which such a formality is required.

On arrival the customs officer shall ensure that the seal is unbroken, shall pass the goods, shall sign the log book and keep the manifest.

In the case of an aircraft with no goods on board, the log book only shall be signed by the police and customs officials.

The fuel on board shall not be liable to customs duties provided the quantity thereof does not exceed that needed for the journey as defined in the log book.

8. As an exception to the general regulations, certain classes of aircraft, particularly postal aircraft, aircraft belonging to aerial transport companies regularly constituted and authorised and those belonging to members of recognised touring societies not engaged in the public conveyance of persons or goods, may be freed from the obligation of landing at a customs aerodrome and authorised to begin or end their journey at certain inland aerodromes appointed by the customs and police administration of each State at which customs formalities shall be complied with.

However, such aircraft shall follow the normal air-route, and make their identity known by signals agreed upon as they fly across the frontier.

Regulations Applicable to Aircraft and Goods

9. Aircraft landing in foreign countries are in principle liable to customs duties if such exist.

If they are to be re-exported, they shall have the benefit of the regulations as to permit by bond or deposit of the taxes.

In the case of the formation between two or more countries of the Union of touring societies, the aircraft of the said countries will have the

Notes

benefit of the regulations of the "Tryptique."

10. Goods arriving by aircraft shall be considered as coming from the country where the log book and manifest have been signed by the customs officer.

As regards their origin and the different customs régimes, they are liable to the regulations of the same kind as are applicable to goods imported by land or sea.

11. With regard to goods exported in discharge of a temporary receiving or bonded account or liable to inland taxes, the senders shall prove their right to send the goods abroad by producing a certificate from the customs of the place of destination.

Air Transit

12. When an aircraft to reach its destination must fly over one or more contracting States, without prejudice to the right of sovereignty of each of the contracting States, two cases must be distinguished:—

1. If the aircraft neither sets down nor takes up passengers or goods, it is bound only to keep to the normal air route and make itself known by signals when passing over the points designated for such purpose.

2. In other cases, it shall be bound to land at a customs aerodrome and the name of such aerodrome shall be entered in the log book before departure. On landing, the customs authorities shall examine the papers and the cargo, and take, if need be, the necessary steps to ensure the re-exportation of the craft and goods or the payment of the dues.

The provisions of paragraph 9 (2) are applicable to goods to be re-exported.

If the aircraft sets down or takes up goods, the customs officer shall verify the fact on the manifest, duly completed, and shall affix, if necessary, a new seal.

Various Provisions

13. Every aircraft during flight, wherever it may be, must conform to the orders from police or customs stations and police or customs aircraft of the State over which it is flying.

14. Customs officers and excise officials, and generally speaking the representatives of the public authorities shall have free access to all starting and landing places for aircraft; they may also search any aircraft and its cargo to exercise their rights of supervision.

15. Except in the case of postal aircraft, all unloading or throwing out in the course of flight, except of ballast, may be prohibited.

16. In addition to any penalties which may be imposed by local law for infringement of the preceding regulations, such infringement shall be reported to the State in which the aircraft is registered and that State shall suspend for a limited time, or permanently, the certificate of registration of the offending aircraft.

17. The provisions of this Annex do not apply to military aircraft visiting a State by special authorisation (Articles 31, 32 and 33 of the Convention), nor to police and customs aircraft (Articles 31 and 34 of the Convention).

Note.—The manifest should not bear on it erasures or corrections except those approved by the proper customs officials, nor contain interlineations or several articles entered on the same line. As many extra sheets may be added as are necessary.

Modele No. 1.

Notes

TEXTBOOK OF AERIAL LAWS

AIR NAVIGATION

MANIFEST.

OR GENERAL DECLARATION OF CARGO.

Space reserved MACHINE.....	{	Registration Mark.
for	
entries	{	NAME:
by		Residence:
Customs	{	Nationality:
Officers.		Number of License:
Goods	{	Place of departure: County: Place of destination: County: Number of annexed declarations:

The Commanding Officer guarantees the accuracy of the contents of this manifest under penalties provided by law. Consequently he has dated and signed this document immediately below the last entry.

FILE NUMBER of Document	MARKS and NUMBERS on the Parcels	NUMBER (in figures and letters) and Descriptions of Parcels	NATURE of The Goods	WEIGHT	OBSERVATIONS

Place of departure:
Place of destination:

AIR NAVIGATION.

No. 2.

Customs declaration made by M
for the following goods:

PARCELS. Marks and Numbers. Number	NATURE of Goods.	DETAILED DESCRIPTION of Contents.	COUNTRY of Origin.	VALUE.	WEIGHT. Gross. Net.	OBSERVATIONS.

At.....this.....day of.....19....
Consignor.....

Notes

REVISED GENERAL PRINCIPLES OF THE INTERNATIONAL AERIAL CONVENTION AS ADOPTED OCTOBER 13, 1919

Owing principally to objections advanced by United States delegates the general principles of the Convention were modified and, as adopted on October 13, 1919, read as follows: The United States of America, Belgium, Bolivia, Brazil, the British Empire, China, Cuba, Ecuador, France, Greece, Guatemala, Haiti, the Hedjaz, Honduras, Italy, Japan, Liberia, Nicaragua, Panama, Peru, Poland, Portugal, Roumania, The Serb-Croat-Slovene State, Siam, Czechoslovakia and Uruguay.

Recognising the progress of aerial navigation, and that the establishment of regulations of universal application will be to the interest of all;

Appreciating the necessity of an early agreement upon certain principles and rules calculated to prevent controversy;

Desiring to encourage the peaceful intercourse of nations by means of aerial communication;

Have determined for these purposes to conclude a Convention, and have appointed as their Plenipotentiaries the following, reserving the right of substituting others to sign the same convention:

THE PRESIDENT OF THE UNITED STATES OF AMERICA:

The Honourable Frank Lyon Polk, Under Secretary of State;

HIS MAJESTY THE KING OF THE BELGIANS:

Mr. Paul Hymans, Minister for Foreign Affairs, Minister of States;

THE PRESIDENT OF THE REPUBLIC OF BOLIVIA:

Mr. Ismael Montes, Envoy extraordinary and Minister Plenipotentiary of Bolivia at Paris;

THE PRESIDENT OF THE REPUBLIC OF BRAZIL:

Mr. Olyntho de Magalhaes, Envoy extraordinary and Minister Plenipotentiary of Brazil at Paris;

HIS MAJESTY THE KING OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND AND OF THE BRITISH DOMINIONS BEYOND THE SEAS, EMPEROR OF INDIA:

The Right Honourable David Lloyd George, M.P., First Lord of the Treasury and Prime Minister; and:

For the Dominion of Canada, by:

The Honourable Sir Albert Edward Kemp, K. C. M. G., Minister of the Overseas Forces;

For the Commonwealth of Australia, by:

The Honourable Sir Thomas Mackenzie, K. C. M. G., High Commissioner for New Zealand in the United Kingdom;

For India, by:

The Right Honourable Baron Sinha, K. C., Under Secretary of State for India;

THE PRESIDENT OF THE CHINESE REPUBLIC:

Mr. Vickiun Wellington Koo, Envoy extraordinary and Minister Plenipotentiary of China at Washington;

THE PRESIDENT OF THE CUBAN REPUBLIC:

Mr. Antonio Sanchez de Bustamante, Dean of the Faculty of Law in the University of Havana, President of the Cuban Society of International Law;

THE PRESIDENT OF THE REPUBLIC OF ECUADOR:

Mr. Enrique Dorn y de Alsuá, Envoy extraordinary and Minister Plenipotentiary of Ecuador at Paris;

THE PRESIDENT OF THE FRENCH REPUBLIC:

Mr. Georges Clemenceau, President of the Council, Minister of War;

HIS MAJESTY THE KING OF THE HELLENES:

Mr. Nicolas Politis, Minister for Foreign Affairs;

THE PRESIDENT OF THE REPUBLIC OF GUATEMALA:

Mr. Joaquim Mendez, formerly Minister of State for Public Works and Public Instructor, Envoy extraordinary and Minister Plenipotentiary of Guatemala at Washington, Envoy extraordinary and Minister Plenipotentiary on special mission at Paris;

THE PRESIDENT OF THE REPUBLIC OF HAITI:

Mr. Tertullien Guibaud, Envoy extraordinary and Minister Plenipotentiary of Haiti at Paris;

HIS MAJESTY THE KING OF THE HEDJAZ:

Mr. Rustem Haider;

THE PRESIDENT OF THE REPUBLIC OF HONDURAS:

Dr. Policarpe Bonilla, on special mission to Washington, formerly President of the Republic of Honduras, Envoy extraordinary and Minister Plenipotentiary;

HIS MAJESTY THE KING OF ITALY:

The Honourable Tommaso Tittoni, Senator of the Kingdom, Minister for Foreign Affairs;

HIS MAJESTY THE EMPEROR OF JAPAN:

Mr. K. Matsui, Ambassador extraordinary and Minister Plenipotentiary of H. M. the Emperor of Japan at Paris;

THE PRESIDENT OF THE REPUBLIC OF NICARAGUA:

Mr. Salvador Chamorro, President of the Chamber of Deputies;

THE PRESIDENT OF THE REPUBLIC OF PANAMA:

Mr. Antonio Burgos, Envoy extraordinary and Minister Plenipotentiary of Panama at Madrid;

THE PRESIDENT OF THE REPUBLIC OF PERU:

Mr. Carlos G. Candamo, Envoy extraordinary and Minister Plenipotentiary of Peru at Paris;

THE PRESIDENT OF THE POLISH REPUBLIC:

Mr. Ignace J. Paderewski, President of the Council of Ministers, Minister for Foreign Affairs;

THE PRESIDENT OF THE PORTUGUESE REPUBLIC:

Dr. Afonso da Costa, formerly President of the Council of Ministers;

HIS MAJESTY THE KING OF ROUMANIA:

Mr. Nicolas Misu, Envoy extraordinary and Minister Plenipotentiary of Roumania at London;

HIS MAJESTY THE KING OF THE SERBS, THE CROATS, AND THE SLOVENES:

Mr. Milenko R. Vesnitch, Envoy extraordinary and Minister Plenipotentiary of H. M. the King of the Serbs, the Croats and the Slovenes, at Paris;

HIS MAJESTY THE KING OF SIAM:

His Highness Prince Charoon, Envoy extraordinary and Minister Plenipotentiary of H. M. the King of Siam at Paris;

THE PRESIDENT OF THE CZECHO-SLOVAK REPUBLIC:

Mr. Karel Kramar, President of the Council of Ministers;

THE PRESIDENT OF THE REPUBLIC OF URUGUAY:

Mr. Juan Antonio Buero, Minister of Industry, formerly Minister of Foreign Affairs;

WHO have agreed as follows:

Chapter I—General Principles

Article 1—The High contracting Parties recognise that every Power has complete and exclusive sovereignty over the air space above its territory.

For the purpose of the present Convention the territory of a State shall be understood as including the national territory, both that of the mother country and of the colonies, and the territorial waters adjacent thereto.

Article 2—Each contracting State undertakes in time of peace to accord freedom of innocent passage above its territory to the aircraft of the other contracting States, provided that the conditions laid down in the present Convention are observed.

Regulations made by a contracting State as to the admission over its territory of the aircraft of the other contracting States shall be applied without distinction of nationality.

Article 3—Each contracting State is entitled for military reasons or in the interest of public safety to prohibit the aircraft of the other contracting States, under the penalties provided by its legislation and subject to no distinction being made in this respect between its private aircraft and those of the other contracting States, from flying over certain areas of its territory.

In that case the locality and the extent of the prohibited areas shall be published and notified beforehand to the other contracting States.

Article 4—Every aircraft which finds itself above a prohibited area shall, as soon as aware of the fact, give the signal of distress provided in Paragraph of Annex D and land as soon as possible outside the prohibited area at one of the nearest aerodromes of the State unlawfully flown over.

Chapter II—Nationality of Aircraft

Article 5—No contracting State shall, except by a special and temporary authorisation, permit the flight above its territory of an aircraft which does not possess the nationality of a contracting State.

Article 6—Aircraft possess the nationality of the State on the register of which they are entered, in accordance with the provisions of Section I (c) of Annex A.

Article 7—No aircraft shall be entered on the register of one of the contracting States unless it belongs wholly to nationals of such State.

No incorporated company can be registered as the owner of an aircraft unless it possess the nationality of the State in which the aircraft is registered, unless the President or chairman of the company and at least two-thirds of the directors possess such nationality, and unless the company fulfills all

TEXTBOOK OF AERIAL LAWS

other conditions which may be prescribed by the laws of the said State.

Article 8—An aircraft cannot be validly registered in more than one State.

Article 9—The contracting States shall exchange every month among themselves and transmit to the International Commission for Air Navigation referred to in article 34, copies of registrations and of cancellations of registration which shall have been entered on their official registers during the preceding month.

Article 10—All aircraft engaged in international navigation shall bear their nationality and registration marks as well as the name and residence of the owner in accordance with Annex A.

Chapter III—Certificates of Airworthiness And Competency

Article 11—Every aircraft engaged in international navigation shall, in accordance with the conditions laid down in Annex B, be provided with a certificate of airworthiness issued or rendered valid by the State whose nationality it possesses.

Article 12—The commanding officer, pilots, engineers and other members of the operating crew of every aircraft shall in accordance with the conditions laid down in Annex E, be provided with certificates of competency and licences issued or rendered valid by the State whose nationality the aircraft possesses.

Article 13—Certificates of airworthiness and of competency and licences issued or rendered valid by the State whose nationality the aircraft possesses, in accordance with the regulations established by Annex B and Annex E and hereafter by the International Commission for Air Navigation, shall be recognised for the purpose of flights within the limits of and above its own territory certificates of competency and licences granted to one of its nationals by another contracting State.

Article 14—No wireless apparatus shall be carried without a special licence issued by the States whose nationality the aircraft possesses. Such apparatus shall not be used except by members of the crew provided with a special licence for the purpose.

Every aircraft used in public transport and capable of carrying ten or more persons shall be equipped with sending and receiving wireless apparatus when the methods of employing such apparatus shall have been determined by the International Commission for Air Navigation.

This Commission may later extend the obligation of carrying wireless apparatus to all other classes of aircraft in the conditions and according to the methods which it may determine.

Chapter IV—Admission to Air Navigation Above Foreign Territory

Article 15—Every aircraft of a contracting State has the right to cross the air space of another State without landing. In this case it shall follow the route fixed by the State over which the flight takes place. However, for reasons of general security it will be obliged to land if ordered to do so by means of the signals provided in Annex D.

Every aircraft which passes from one State into another shall, if the regulations of the latter State require it, land in one of the aerodromes fixed by the latter. Notification of these aerodromes shall be given by the contracting States to the International Commission for Air Navigation and by it transmitted to all the contracting States.

The establishment of international airways shall be subject to the consent of the States flown over.

Article 16—Each contracting State shall have the right to establish reservations and restrictions in favour of its national aircraft in connection with the carriage of persons and goods for hire between two points on its territory.

Such reservations and restrictions shall be immediately published, and shall be communicated to the International Commission for Air Navigation, which shall notify them to the other contracting States.

Article 17—The aircraft of a contracting State which establishes reservations and restrictions in accordance with Article 16, may be subjected to the same reservations and restrictions in any other contracting State, even though the latter State does not itself impose the reservations and restrictions on other foreign aircraft.

Article 18—Every aircraft passing through the territory of a contracting State, including landing and stoppages reasonably necessary for the purpose of such transit, shall be exempt from

any seizure from on the ground of infringement of patent, design or model, subject to the deposit of security the amount of which in default of amicable agreement shall be fixed with the least possible delay by the competent authority of the place of seizure.

Chapter V—Rules to be Observed on Departure, When Under Way and on Landing

Article 19—Every aircraft engaged in international navigation shall be provided with:

- (a) A certificate of registration in accordance with Annex A;
- (b) A certificate of airworthiness in accordance with Annex B;

- (c) Certificates and licences of the commanding officer, pilots and crew in accordance with Annex E;

- (d) If it carries passengers, a list of their names;

- (e) If it carries freight, bills of lading and manifest;

- (f) Log books in accordance with Annex C;

- (g) If equipped with wireless, the special licence prescribed by Article 14.

Article 20—The log books shall be kept for two years after the last entry.

Article 21—Upon the departure or landing of an aircraft, the authorities of the country shall have, in all cases, the right to visit the aircraft and to verify all the documents with which it must be provided.

Article 22—Aircraft of the Contracting States shall be entitled to the same measure of assistance for landing, particularly in case of distress, as national aircraft.

Article 23—With regard to the salvage of aircraft wrecked at sea the principles of maritime law will apply, in the absence of any agreement to the contrary.

Article 24—Every aerodrome in a contracting State, which upon payment of charges is open to public use by its national aircraft, shall likewise be open to the aircraft of all the other contracting States.

In every such aerodrome there shall be a single tariff of charges for landing and length of stay applicable alike to national and foreign aircraft.

Article 25—Each contracting State undertakes to adopt measures to ensure that every aircraft flying above the limits of its territory and that every aircraft wherever it may be, carrying its nationality mark, shall comply with the regulations contained in Annex D.

Each of the contracting States undertakes to ensure the prosecution and punishment of all persons contravening these regulations.

Chapter VI—Prohibited Transport

Article 26—The carriage by aircraft of explosives and of arms and munitions of war is forbidden in international navigation. No foreign aircraft shall be permitted to carry such articles between any two points in the same contracting State.

Article 27—Each State may, in aerial navigation, prohibit or regulate the carriage or use of photographic apparatus. Any such regulations shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to the other contracting States.

Article 28—As a measure of public safety, the carriage of objects other than those mentioned in articles 26 and 27 may be subjected to restrictions by any State. Any such regulations shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to the other contracting States.

Article 29—All restrictions mentioned in Article 28 shall be applied equally to national and foreign aircraft.

Chapter VII—State Aircraft

Article 30—The following shall be deemed to be State Aircraft:

- (a) Military aircraft.

- (b) Aircraft exclusively employed in State service, such as posts, customs, police.

Every other aircraft shall be deemed to be a private aircraft.

All state aircraft other than military, customs and police aircraft shall be treated as private aircraft and as such shall be subject to all the provisions of the present Convention.

Article 31—Every aircraft commanded by a person in military service detailed for the purpose shall be deemed to be a military aircraft.

Article 32—No military aircraft of a contracting State shall

fly over the territory of another contracting State nor land thereon without special authorisation. In case of such authorisation the military aircraft shall enjoy, in principle, in the absence of special stipulation the privileges which are customarily accorded to foreign ships of war.

A military aircraft which is forced to land or which is requested or summoned to land shall by reason thereof acquire no right to the privileges referred to in the above paragraph.

Article 33—Special arrangements between the States concerned will determine in what cases police and customs aircraft may be authorised to cross the frontier. They shall in no case be entitled to the privileges referred to in Article 32.

Chapter VIII—International Commission for Air Navigation

Article 34—There shall be instituted, under the name of the International Commission for Air Navigation, a permanent Commission placed under the direction of the League of Nations and composed of:

Two Representatives of each of the following States: The United States of America, France, Italy and Japan;

One Representative of Great Britain and one of each of the British Dominions and of India;

One Representative of each of the other contracting States.

Each of the five States first-named (Great Britain, the British Dominions and India counting for this purpose as one State) shall have the least whole number of votes which, when multiplied by five, will give a product exceeding by at least one vote the total number of the votes of all the other contracting States.

All the States other than the five first named shall each have one vote.

The International Commission for Air Navigation shall determine the rules of its own procedure and the place of its permanent seat, but it shall be free to meet in such places as it may deem convenient. Its first meeting shall take place at Paris. This meeting shall be convened by the French Government, as soon as a majority of the signatory States shall have notified to it their ratification of the present Convention.

The duties of this Commission shall be:

(a) To receive proposals from or to make proposals to any of the contracting States for the modification or amendment of the provisions of the present Convention, and to notify changes adopted;

(b) To carry out the duties imposed upon it by the present Article and by Articles 9, 13, 14, 15, 17, 27, 28, 36, and 37 of the present Convention;

(c) To amend the provisions of the Annexes A-G;

(d) To collect and communicate to the contracting States information of every kind concerning international air navigation;

(e) To collect and communicate to the contracting States all information relating to wireless telegraphy, meteorology and medical science which may be of interest to air navigation;

(f) To ensure the publication of maps for air navigation in accordance with the provisions of Annex F;

(g) To give its opinion on questions which the States may submit for examination.

Any modification of the provisions of any one of the Annexes may be made by the International Commission for Air Navigation when such modification shall have been approved by three fourths of the total possible votes which could be cast if all the States were represented and shall become effective from the time when it shall have been notified by the International Commission for Air Navigation to all the contracting States.

Any proposed modification of the Articles of the present Convention shall be examined by the International Commission for Air Navigation, whether it originates with one of the contracting States or with the Commission itself. No such modification shall be proposed for adoption by the contracting States, unless it shall have been approved by at least two-thirds of the total possible votes.

All such modifications of the Articles of the Convention (but not of the provisions of the Annexes) must be formally adopted by the contracting States before they become effective.

The expenses of organisation and operation of the International Commission for Air Navigation shall be borne by the contracting States in proportion to the number of votes at their disposal.

The expenses occasioned by the sending of technical delegations will be borne by their respective States.

Chapter IX—Final Provisions

Article 35—The High Contracting Parties undertake as far

as they are respectively concerned to co-operate as far as possible in international measures concerning:

(a) The collection and dissemination of statistical, current, and special meteorological information, in accordance with the provisions of Annex G;

(b) The publication of standard aeronautical maps, and the establishment of the necessary wireless stations, and the observance of international wireless regulations.

Article 36—General provisions relative to customs in connection with international air navigation are the subject of a special agreement contained in Annex H to the present Convention.

Nothing in the present Convention shall be construed as preventing the contracting States from concluding, in conformity with its principles, special protocols as between State and State in respect of customs, police, posts and other matters of common interest in connection with air navigation. Any such protocols shall be at once notified to the International Commission for Air Navigation which shall communicate this information to the other contracting States.

Article 37—In the case of a disagreement between two or more States relating to the interpretation of the present Convention, the question in dispute shall be determined by the Permanent Court of International Justice to be established by the League of Nations, and until its establishment by arbitration.

If the parties do not agree on the choice of the arbitrators, they shall proceed as follows:

Each of the parties shall name an arbitrator, and the arbitrators shall meet to name an umpire. If the arbitrators cannot agree, the parties shall each name a third State, and the third State so named shall proceed to designate the umpire, by agreement or by each proposing a name and then determining the choice by lot.

Disagreement relating to the technical regulations annexed to the present Convention, shall be settled by the decision of the International Commission for Air Navigation by a majority of votes.

In case the difference involves the question whether the interpretation of the Convention or that of a regulation is concerned, final decision shall be made by arbitration as provided in the first paragraph of this Article.

Article 38—In case of war, the provisions of the present Convention shall not affect the freedom of action of the contracting States either as belligerents or as neutrals.

Article 39—The provisions of the present Convention are completed by the Annexes A to H which, subject to Article 34 (c), shall have the same effect and shall come into force at the same time as the Convention itself.

Article 40—The British Dominions and India shall be deemed to be States for the purposes of the present Convention.

The territories and nationals of Protectorates or of territories administered in the name of the League of Nations, shall, for the purposes of the present Convention, be assimilated to the territory and nationals of the Protecting or Mandatory States.

Article 41—States which have not taken part in the war of 1914–1919 shall be permitted to adhere to the present Convention.

This adhesion shall be notified through the diplomatic channel to the Government of the French Republic, and by it to all the signatory or adhering States.

Article 42—A State which took part in the war of 1914–1919 but which is not a signatory of the present Convention, may adhere only if it is a member of the League of Nations or, until January 1, 1923, if its adhesion is approved by the Allied and Associated Powers signatories of the Treaty of Peace concluded with the said States. After January 1, 1923, this adhesion may be admitted if it is agreed to by at least three fourths of the signatory and adhering States voting under the conditions provided by Article 34 of the present Convention.

Applications for adhesions shall be addressed to the Government of the French Republic, which will communicate them to other contracting Powers. Unless the State applying is admitted ipso facto as a Member of the League of Nations, the French Government will receive the votes of the said powers and will announce to them the result of the voting.

Article 43—The present Convention may not be denounced before January 1, 1922. In case of denunciation, notification thereof shall be made to the Government of the French Republic, which shall communicate it to the other contracting Parties. Such denunciation shall not take effect until at least one year after the giving of notice, and shall take effect only with respect to the power which has given notice.

NATIONAL AND MUNICIPAL AERIAL LAWS AND REGULATIONS FOR AERIAL NAVIGATION

National aerial laws and regulations for aerial navigation should be uniform and based on the general principles of international aerial laws and regulations. Else confusion will ensue.

Fortunately the International Convention for the Regulation of International Air Navigation agreed to by the representatives of the allied and associated Powers during the Peace Conference, May 1919, became available in time to use for a base for the drafting of national air laws and regulations of aerial navigation for the nations of the world.

As it is impossible to foresee the nature and extent of aerial developments, all laws must be tentative and the law-makers must be ever ready to change them.

Evolution of British Aerial Navigation Laws

The evolution of British Aerial Navigation Laws affords an illustration of the changes made necessary by the progress of aeronautics.

The British Aerial Navigation Act of June 2, 1911, read as follows:—

“Be it enacted by the King’s most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

Power to prohibit navigation of aircraft over prescribed areas.

1.—The Secretary of State may, for the purpose of

protecting the public from danger, from time to time, by order prohibit the navigation of aircraft over such areas as may be prescribed in the order, and if any person navigates an aircraft over any such area in contravention of any such order, he shall be guilty of an offence under this Act, unless he proves that he was compelled to do so by reason of stress of weather or other circumstances over which he had no control.

2.—Any such order may apply either generally, to all aircraft or to aircraft of such classes and descriptions only as may be specified in the order, and may prohibit the navigation of aircraft over any such prescribed area either at all times or at such times or on such occasions only as may be specified in the order, and either absolutely or subject to such exceptions or conditions as may be so specified.

PENALTIES FOR OFFENCES.

1.—If any person is guilty of an offence, under this Act, he shall be liable on conviction on indictment or on summary conviction to imprisonment for a term not exceeding six months, or to a fine not exceeding two hundred pounds, or to both such imprisonment and fine.

2.—Any person aggrieved by a summary conviction under this Act may, in England or Ireland appear to a court of quarter sessions, and in Scotland in like manner as in the case of a conviction under the Motor Car Act, 1903, as provided by section eighteen of that Act.

This Act may be cited as the “Aerial Navigation Act, 1911.”

The Aerial Navigation Act of February 14, 1913, read as follows:

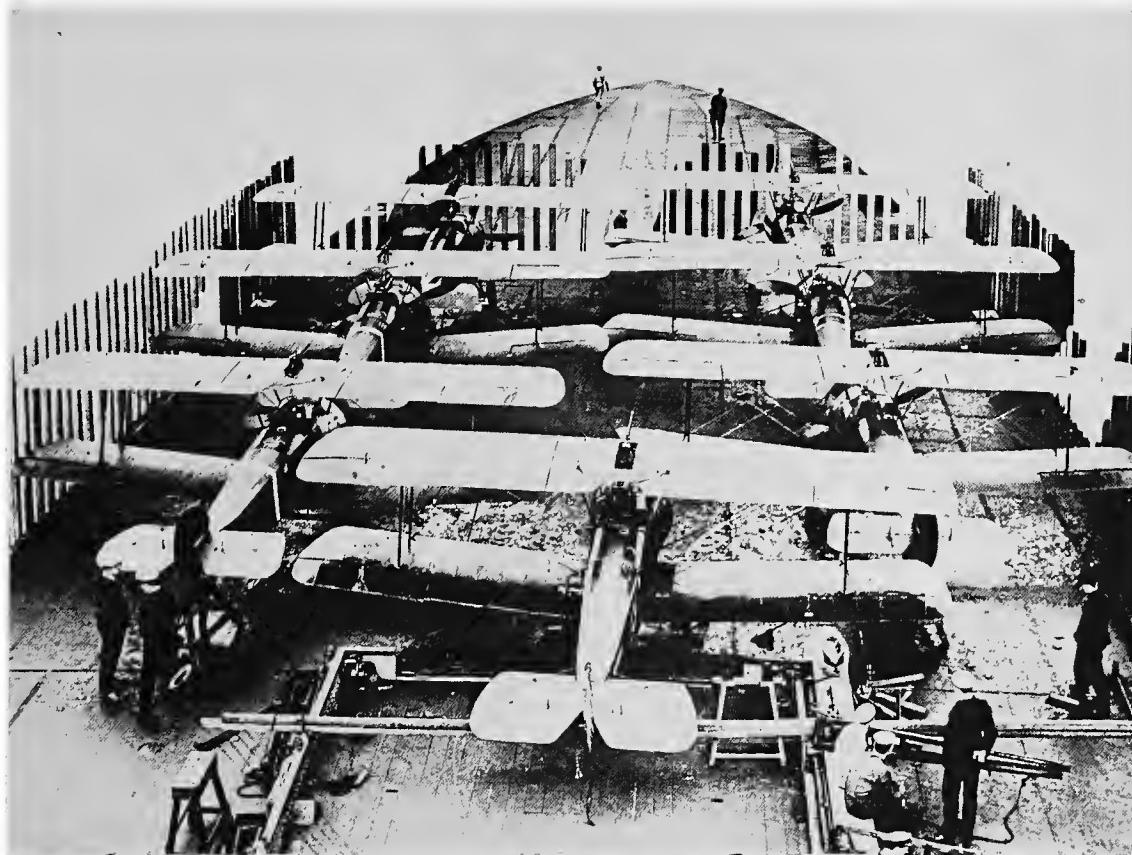
“An Act to Amend the Aerial Navigation Act, 1911.

“Be it enacted by the King’s most Excellent Ma-

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This photograph of the N.C.4, taken at sea by Lieut. Commander C. C. Todd, Jr., U.S.N., shows that even the N.C.4 looks small when seen in the air. The only possible way of ascertaining the identity of aircraft in flight is by large numbers painted on the sides of the fuselage and top and bottom of wings and by communicating with them by wireless and radio-telegraphy. But to enforce laws and prevent aerial smuggling will require an aerial force.



In carrying out international aerial laws the "aerial police," international or national, will, no doubt, have to use "aerodrome ships," which will house the aeroplanes needed at sea to "head off" aeroplanes of doubtful identity or "pirates of the air" and other lawbreakers. On receipt of a wireless message that the lawbreaker is at large, the planes will be sent up from the "aerodrome ship," just as they were sent up daily to head off the German air raiders during the war. In this case the aerial policeman will order the lawbreaker by radio phone to land at a given aerodrome. If he fails to fly in the direction indicated, the "policeman" will probably fire at the motors, to cripple the 'plane and force the lawbreaker to obey. The photograph shows the deck of a British aerodrome ship with seven armed air scouts ready to start off.



Will it be necessary to turn dirigibles into aeroplane carriers to use the aeroplanes to police the air at various altitude levels? Aeroplanes have been successfully launched from dirigibles. This shows the British dirigible R-23 carrying an aeroplane underneath the rigid keel, which can be easily released.



Policing the air and enforcing air traffic regulations will be especially difficult under conditions shown in this picture—a large Handley-Page flying over the clouds which entirely screen it and the other plane from which the photograph was taken.

jesty by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

“Extension of power of Secretary of State to regulate aircraft.

1.—The purposes for which a Secretary of State may make orders prohibiting the navigation of aircraft over prescribed areas under the Aerial Navigation Act, 1911, shall include the purposes of the defence or safety of the realm, and, where an order is made for those purposes, the area prescribed may include the whole or any part of the coastline of the United Kingdom and the territorial waters adjacent thereto.

2.—The power of the Secretary of State under the said Act shall include power by order to prescribe the areas within which aircraft coming from any place outside the United Kingdom are to land and the other conditions to be complied with by such aircraft, and if any person contravenes any of the provisions of any such order, he shall be guilty of an offence under the said Act, unless he proves that he was compelled to do so by reason or stress of weather or circumstances over which he had no control.

POWER TO COMPEL COMPLIANCE WHEN AIRCRAFT DISOBEYS SIGNALS.

If an aircraft flies or attempts to fly over any area prescribed under this Act for the purposes of the defence or safety of the realm, or, in the case of an aircraft coming from any place outside the United Kingdom, fails to comply with any of the conditions as to landing prescribed by an order under the last foregoing section, it shall be lawful for any officer designated for the purpose by regulations made by the Secretary of State to cause such signal as may be prescribed by those regulations to be given and after such signal has been given if the aircraft fails to respond to the signal by complying with such regulations as may be made by the Secretary of State prescribing the action to be taken on such a signal being given, it shall be lawful for the officer to fire at or into such aircraft and to use any and every other means necessary to compel compliance, and every and any

such officer and every other person acting in his stead and discharged from any indictment, penalty, action, or other proceeding for so doing.

This Act may be cited as the Aerial Navigation Act, 1913; and the Aerial Navigation Act, 1911, and this Act may be cited together as the Aerial Navigation Acts, 1911 and 1913.”

British Air Navigation Regulations, 1919

Great Britain was the first country to issue regulations for civil aeronautics after the signing of the Armistice. These regulations, which follow, were issued by the British Air Ministry under date of April 30th, 1919, and while some of the provisions have proven undesirable and have practically been suspended, the draft offers a good basis for development of national aerial laws, especially for nations surrounded by other countries like England, France and Italy.

“In pursuance of the powers conferred upon me by the Air Navigation Acts, 1911 and 1913, and all other powers enabling me in that behalf, I, the Right Honorable Winston Spencer Churchill, one of His Majesty’s Principal Secretaries of State, by order make the following regulations:—

General Conditions of Flying

I. No aircraft shall fly within the limits of the British Islands and the territorial waters adjacent thereto unless the following conditions are complied with:—

(1) The aircraft shall be registered in the prescribed manner;

(2) The aircraft shall bear the prescribed registration and nationality marks, affixed or

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painted on the aircraft in the prescribed manner;

(3) The personnel of the aircraft shall be licensed in the prescribed manner;

(4) There shall be carried in the aircraft:—

(a) The certificate of registration; and

(b) The license of any member of the personnel who is required to be licensed;

(5) The provisions of these regulations as to general safety, and the rules as to lights and signals and rules of the air, as set out in these regulations, shall be duly complied with;

(6) No mails shall be carried without the consent in writing of the Postmaster-General, and no wireless apparatus shall be installed or worked except under and in accordance with a license granted by the Postmaster-General, containing such conditions as may be approved by the Secretary of State;

(7) The aircraft shall not fly over any prohibited area as defined by these regulations;

Provided that—

(a) the requirements of this regulation as to registration and as to the bearing of registration and nationality marks, shall not apply to aircraft built for the purpose of experiment, and flown for the purpose of experiment or test only, within three miles of an aerodrome or aircraft factory or in accordance with such directions (if any) as may be given by the Secretary of States; and

(b) the requirements of this regulation as to licensing of personnel shall not apply within the precincts of an aerodrome in the case of personnel under instructions or of aircraft flying for experimental purposes.

Additional Conditions in Certain Cases

II. Without prejudice to the last foregoing regulation—

(1) A passenger aircraft carrying passengers shall not—

(a) fly within the limits aforesaid unless it has been certified in the prescribed manner as airworthy, and the prescribed conditions as to airworthiness, periodical overhaul, and examination before each flight are complied with, and all the prescribed certificates in relation to airworthiness are carried in the aircraft; or

(b) use as a regular place of departure or place of landing any place other than a licensed aerodrome, or a Royal Air Force aerodrome or aerodrome under the control of the Secretary of State approved for the purpose by the Secretary of State;

(2) A passenger or goods aircraft shall not fly within the limits aforesaid unless there are carried in the aircraft the prescribed log books, accurately kept up to date in the prescribed form and manner;

(3) An aircraft arriving in or departing from the United Kingdom shall comply with the provisions of these regulations applicable to such a case.

Reference to Schedule

III.—(1) The provisions in the schedules to those regulations shall have effect as part of these regulations, and shall be duly observed by all persons concerned in the cases to which they relate, that is to say:—

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SCHEDULE I	SUBJECT MATTER
	Registration of aircraft.
II	Licensing of personnel.
III	Certificates of airworthiness for passenger aircraft, and periodical overhaul and examination of such aircraft.
IV	Registration and nationality marks.
V	Log books.
VI	Prohibited areas.
VII	Rules as to lights and signals and rules of the air.
VIII	Rules as to aircraft arriving in or departing from the United Kingdom.

(2) The Secretary of State may, if he thinks fit, issue directions for the purpose of supplementing or giving full effect to the provisions of the above schedules, or for any purpose for which provision is under these regulations to be made by direction of the Secretary of State.

Aerodromes

IV.—(1) No place in the British Islands shall be used as an aerodrome or as a regular place of landing or departure by passenger aircraft carrying passengers, unless it has been licensed for the purpose by the Secretary of State, and any conditions of such license are complied with.

(2) There shall be kept exhibited in a conspicuous place at all aerodromes used for the landing or departure of passenger or goods aircraft, a tariff of charges in such form and on such scale as may be directed or approved by the Secretary of State.

(3) In the case of any contravention of or failure to comply with this regulation, the proprietor of the aerodrome shall be deemed to have acted in contravention of or, as the case may be, failed to comply with these regulations.

(4) This regulation shall not apply to Royal

Air Force aerodromes or aerodromes under the control of the Secretary of State, the use of which has been sanctioned by the Secretary of State; provided that any directions of the Secretary of State as to the use of such aerodromes are complied with.

General Safety Provisions

V.—(1) An aircraft shall not fly over any city or town except at such altitude as will enable the aircraft to land outside the city or town should the means of propulsion fail through mechanical breakdown or other cause;

Provided that this prohibition shall not apply to any area comprised within a circle of a radius of one mile from the centre of a licensed aerodrome or of a Royal Air Force aerodrome, or of an aerodrome under the control of the Secretary of State.

(2) No person in any aircraft shall—

(a) carry out any trick flying or exhibition flying over any city or town area or populous district; or

(b) carry out any trick flying or exhibition flying over any regatta, race meeting, or meeting for public games or sports, except where specially arranged for in writing by the promoters of such regatta or meeting; or

(c) carry out any flying which by reason of low altitude or proximity to persons or dwellings is dangerous to public safety; or

(d) drop or cause or permit to be dropped, from the aircraft any article except ballast as authorised by the rules of the air as set out in these regulations.

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Production of Licences, Certificates and Log-Books for Inspection

VI.—(1) Any member of the personnel of an aircraft shall on demand produce his license for the inspection of any persons authorised for the purpose by the Secretary of State.

(2) The owner and person in charge of any aircraft shall, on demand, produce for the inspection of any person authorised for the purpose by the Secretary of State, any certificates or licenses relating to the aircraft, and also, in the case of passenger or goods aircraft, any of the prescribed log-books.

Right of Inspection of and Access to Aerodromes and Factories

VII.—(1) Any person authorised by the Secretary of State for the purpose shall have the right of access at all reasonable times to any aerodrome for the purpose of inspecting the same, or to any place to which access is necessary for the purpose of carrying out his powers and duties under these regulations.

(2) All aircraft belonging to or employed in the service of His Majesty shall have at all reasonable times the right of access to any licensed aerodrome.

(3) During the construction of a passenger aircraft any person authorised by the Secretary of State shall at all times during working hours have the right of access, for purposes of inspection, to that portion of the shops in which parts are being manufactured or assembled, and to drawings of the parts under inspection, whether at the works of the main contractor or of sub contractors.

Exceptions

VIII. These regulations do not, except where otherwise expressly stated, apply—

(a) to military aircraft belonging to or employed in the service of his Majesty; or

(b) to any aircraft or to any persons if and to such extent as such aircraft or persons may be excepted from these regulations, or any of them, by direction of the Secretary of State on the recommendation of a Government Department.

Foreign Aircraft

IX. The provisions of these regulations as to—

- (a) registration of aircraft;
- (b) licensing of personnel;
- (c) airworthiness;
- (d) log books; an
- (e) wireless apparatus;

shall not apply to foreign aircraft:

Provided that—

(i) no foreign military aircraft shall fly over or land in the British Isles or the territorial waters adjacent thereto except on the express invitation or with the express permission of His Majesty or of a Government Department, but any such aircraft landing on such invitation or with such permission shall be exempt from these regulations to such extent and on such conditions as may be specified in the invitation or permission; and

(ii) where any foreign aircraft, after first landing in the British Islands, flies over any part thereof except in such manner as may be necessary in order to proceed to a foreign

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destination, all the provisions of these regulations shall apply to that aircraft unless there are carried in the aircraft, and produced for inspection as and when required by the Secretary of State, certificates, licenses, and log books issued by the responsible authority in the country to which the aircraft belongs, comply substantially with the provisions of these regulations, and unless (in the case of a passenger aircraft) the conditions of the aircraft from the point of view of the safety of the passengers and personnel correspond substantially with the particulars contained in the certificates produced.

Penalties

X.—(1) Where any aircraft flies in contravention of, or fails to comply with, these regulations or any provision thereof, the owner of the aircraft, and also the pilot or commander, shall be deemed to have contravened or, as the case may be, failed to comply with these regulations:

Provided that it shall be a good defence to any proceedings for contravention or failure to comply with these regulations if the contravention or failure is proved to have been due to stress of weather or other unavoidable cause.

(2) If any person obstructs or impedes any person acting under the authority of the Secretary of State in the exercise of his powers and duties under these regulations, such first-mentioned person shall be deemed to have acted in contravention of these regulations.

(3) Any person contravening or failing to comply with these regulations or any provision thereof is liable to imprisonment for a term not

exceeding six months or to a fine not exceeding two hundred pounds, or to both such imprisonment and fine.

(4) Any aircraft which flies or attempts to fly over a prohibited area is liable to be fired on in accordance with section two of the Aerial Navigation Act, 1913, and the provisions of these regulations relating thereto.

(5) If any person in any aircraft is guilty of any act of espionage to which the provisions of section one of the Official Secrets Act, 1911, apply, he is liable to penal servitude for a term not exceeding seven years.

Power to Cancel or Suspend Licenses and Certificates

XI.—(1) The license of any member of the personnel of an aircraft, or the license of any aerodrome, may be cancelled or suspended by the Secretary of State on sufficient ground being shown to his satisfaction, after due inquiry, and his decision shall be final:

Provided that in special cases the Secretary of State may suspend any such license temporarily and provisionally pending the holding of an inquiry.

(2) Any certificate relating to the airworthiness of an aircraft may be cancelled or suspended by the Secretary of State if he is satisfied that reasonable doubt exists as to the safety of the aircraft in question, or of the type to which the aircraft in question belongs.

(3) Where any person is convicted of any contravention or failure to comply with these regulations in respect of any aircraft, the Secretary of State may cancel or suspend the certificate of registration of that aircraft.

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Interpretation

XII.—In these regulations, unless the context otherwise requires—

“Aircraft” includes airships and flying machines, all balloons, whether fixed or free, and kites.

“Airship” means an aircraft lighter-than-air and having means of propulsion.

“Balloon” means an aircraft lighter-than-air and having no means of propulsion.

“Flying machine” includes aeroplanes, seaplanes, flying boats, and other flying machines heavier-than-air and having means of propulsion.

“Military aircraft” includes naval, military and Air Force aircraft.

“Passenger aircraft” and “goods aircraft” mean respectively aircraft intended for carrying passengers or goods (including mails), for hire or reward, and include respectively aircraft on which passengers or goods are actually so carried.

“Personnel” (in relation to any aircraft) includes any pilot, commander, navigator, and engineer, and any operative member of the crew.

“Aerodrome” means any definite and limited ground or water area intended to be used and capable of being used, either wholly or in part, for the landing or departure of aircraft.

“Proprietor of an aerodrome” includes any person responsible for the management thereof.

“Licensed aerodrome” means an aerodrome licensed under these regulations.

“Prescribed” means prescribed by these regulations or by directions of the Secretary of State thereunder.

“Prohibited area” means any of the areas re-

ferred to in Schedule VI. of these regulations.

“Secretary of State” includes, in relation to any purpose of these regulations, any person authorized by the Secretary of State for that purpose.

The Interpretation Act, 1889, applies for the purpose of the interpretation of these regulations as it applies for the purpose of the interpretation of an Act of Parliament, and as if these regulations were an Act of Parliament.

Saving

XIII.—Nothing in these regulations shall be construed as conferring any right to land in any place as against the owner of the land or other persons interested therein, or as prejudicing the rights or remedies of any person in respect of any injury to persons or property caused by any aircraft.

Short Title

XIV.—These regulations may be cited as the Air Navigation Regulations, 1919.

WINSTON S. CHURCHILL,

One of His Majesty’s Principal Secretaries
of State. Air Ministry, London, April 30th,
1919.

Schedule I—Registration of Aircraft

1.—Certificates of registration shall be granted by the Secretary of State, and upon registration there shall be assigned to the registered aircraft a registration mark.

2.—The applicant, unless the Secretary of State in special cases otherwise allows, must be a British subject, or in the case of a body cor-

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porate must be registered and have its principal place of business in the United Kingdom.

3.—Application for registration shall be made to the Secretary, Air Ministry.

4.—The fee to be charged for registration will be one guinea.

5.—Upon any change of ownership of registered aircraft, the certificate of registration shall lapse, but a fresh certificate may be applied for by the new owner.

Air Navigation Directions I—Air Navigation Acts, 1911-1919 Directions

The Air Navigation Regulations, 1919, recently issued, provide for the issue of supplementary "Directions" as may be necessary, and the following directions are accordingly notified for the information of all concerned:

I—Registration of Aircraft

1.—With reference to Regulations 1 (1) and Schedule 1, applications for registration should be made to the Secretary, Air Ministry, London, W. C. 2.

2.—Application forms will be supplied on demand.

Schedule II—Licensing of Personnel

Licensing Authority

1.—Licenses shall be granted by the Secretary of State. Application therefor shall be made to the Secretary, Air Ministry.

Pilots

2.—A person applying for a pilot's license to fly passenger or goods aircraft will be required to—

(a) Pass a medical examination carried out under the control of the Secretary of State.

(b) Produce a certificate of competency issued by the Secretary of State, or be qualified as a Royal Air Force pilot.

(c) Submit proof of recent reasonable flying experience on the class of machine for which the license is required, or failing such proof undergo practical tests.

3.—A person applying for a pilot's license to fly machines other than passenger or goods aircraft must either be qualified as a Royal Air Force pilot, or produce a certificate of competency issued by the Secretary of State.

Navigators

4.—A person applying for a license to navigate passenger or goods aircraft will be required to—

(a) Pass a medical examination carried out under the control of the Secretary of State.

(b) Produce a certificate of competency issued by the Secretary of State.

Engineers

5.—A person applying for a license to be engaged as engineer on passenger or goods aircraft will be required to—

(a) Pass a medical examination carried out under the control of the Secretary of State.

(b) Submit proof of sufficient knowledge and experience in the management of aircraft engines.

(c) Undergo, if necessary, practical and theoretical tests.

Notes

Other Persons

6.—Persons applying for a license in any other capacity than those above specified must comply with such conditions as may be directed by the Secretary of State.

General

7.—Holders of licenses may be required from time to time to undergo further medical examination carried out under the control of the Secretary of State.

8.—Licenses shall remain valid for the following periods:

Pilots' licenses..... 6 months

Other licenses..... 12 months

and shall not be valid unless endorsed by the Secretary of State at those intervals.

9.—The fee to be charged in respect of each license issued and in respect of each such endorsement as aforesaid shall be five shillings.

In the event of any applicant being required to undergo such practical test as is specified in paragraphs 2 (c) and 5 (c) above, a further fee of one guinea will be charged.

The directions concerning this schedule are of considerable interest:

II—Licensing of Personnel

1.—With reference to Regulations 1 (3) and Schedule II, applications for licenses should be made to the Secretary, Air Ministry, London, W. C. 2.

2.—Any member of the personnel of an aircraft, other than those specifically mentioned in Schedule II, can obtain on application to the

Secretary, Air Ministry, particulars of the requirements for obtaining a license.

3.—Application forms will be supplied on demand.

Medical Requirements

4.—Every applicant before obtaining a license as a pilot, navigator, or engineer of aircraft engaged in public transport will present himself for examination by specially qualified men appointed by or acting under the authority of the Secretary of State.

5.—Medical supervision, both for the selection and the maintenance of efficiency, shall be based upon the following requirements of mental and physical fitness:

(a) Good family and personal history, with particular reference to nervous stability. Absence of any mental, moral, or physical defect which will interfere with flying efficiency.

(b) MINIMUM AGE for pilots and navigators engaged in public transport shall be nineteen (19) years.

(c) GENERAL SURGICAL EXAMINATION.—The applicant must neither suffer from any wound, injury or operation, nor possess any abnormality, congenital or otherwise, which will interfere with the efficient and safe handling of aircraft.

(d) GENERAL MEDICAL EXAMINATION.—The applicant must not suffer from any disease or disability that renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys, and nervous system capable

Notes

of withstanding the effects of altitude and also the effects of prolonged flight.

(e) **EYE EXAMINATION.**—The applicant must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two (2) dioptres of latent hypermetropia; muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye and must possess normal color perception.

(f) **EAR EXAMINATION.**—The middle ear must be healthy. The applicant must possess a degree of auditory acuity compatible with the efficient performance of his duties.

(g) The vestibular mechanism must be intact, and neither unduly hypersensitive nor hyposensitive.

(h) **NOSE AND THROAT EXAMINATION.**—The applicant must possess free nasal entry on either side, and not suffer from serious acute or chronic affections of the upper respiratory tract.

6.—The successful applicant will receive a medical certificate of acceptance, which must be produced before the license can be issued.

7.—In order to insure the maintenance of efficiency, every applicant shall be re-examined periodically, at least every six months, and the findings attached to his original record. In case of illness or accident, also, a pilot, navigator or engineer shall be re-examined and pronounced fit before resuming aerial duties. The date and result of each re-examination shall be recorded on the applicant's flying certificates.

8.—No applicant who, before May 1, 1919, has given proof of his flying ability shall, so long

as he retains such ability, be necessarily disqualified because he fails to fulfill all of the above requirements.

9.—Applications for medical examination should be made to the Secretary, Air Ministry, London, W. C. 2.

Flying Certificates

10.—CERTIFICATES FOR PILOTS OF FLYING MACHINES:

“A” Flying Certificate for private pilots (not valid for flying passenger or goods aircraft).

“B” Pilot’s Flying Certificate for flying passenger or goods aircraft.

“A” Private Pilot’s Flying Certificate

(I) PRACTICAL TESTS.

In each practical test the candidate must be alone in the flying machine.

(a) **TEST FOR ALTITUDE AND GLIDING FLIGHT.**—A flight without landing, during which the pilot shall remain for at least an hour at a minimum altitude of 6,000 feet above the point of departure. The descent shall finish with a glide, the engines cut off at 4,500 feet above the landing ground. The landing shall be made within 150 yards or less of a point fixed beforehand by the official examiners of the test without starting the engine again.

(b) **TESTS OF SKILL.**—A flight without landing around two posts (or buoys) situated 500 yards apart, making a series of five figure-of-eight turns, each turn reaching one of the two posts (or buoys). This flight shall be made at an altitude of not more than 600 feet above the ground (or water) without touching the ground (or water). The landing shall be effected by:

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(i) Finally shutting off the engine or engines at latest when the aircraft touches the ground (or water).

(ii) Finally stopping the flying machine within a distance of 50 yards from a point fixed by the candidate before starting.

(II) TECHNICAL EXAMINATION.

(a) Rules as to lights and signals, and rules of the air.

(b) Rules for aerial traffic in the vicinity of aerodromes.

(c) NIGHT FLIGHT.—A thirty minutes' flight at an altitude of at least 1,500 feet, made between two hours after sunset and two hours before sunrise.

(II) TECHNICAL EXAMINATION.

After satisfactory practical tests have been passed, candidates will submit themselves when summoned to examination on:

(a) Flying machines.

(b) Engines.

(c) Navigation.

(a) Flying Machines

AEROPLANES AND SEAPLANES.—Theoretical abstract knowledge of the resistance of the air in connection with planes, rudders, elevators and propellers; functions of the different parts of the machine and their controls.

Assembling of aeroplanes, propellers, undercarriages, rudders, elevators and their controls.

Practical tests on rigging.

(b) Engines

General knowledge of internal combustion engines and their various functions; valve gear, carburation, ignition, exhaust.

Characteristics of aero-engines and a general idea of their construction, adjustment and assembling.

Causes of the faulty running of engines. Fuel and oils. Description of the details of the aero-engines used. Adjustments, lubrication, upkeep, disassembling and assembling of the principal parts; causes of breakdown. Use of throttle and other controls.

Practical tests in running repairs.

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(c) Navigation

Knowledge of rules as to lights and signals, rules of the air, and rules for aerial traffic in the vicinity of aerodromes.

Practical knowledge of the special conditions of aerial traffic.

Map reading, use of compass, location of position.

Remarks

The practical tests shall be carried out within a maximum period of one month.

They may be carried out in any order, and each may be attempted twice. They shall be witnessed by at least two properly accredited examiners who will hand over the official reports to the proper authorities.

The official reports will give full details of the flights, especially of the landings. The candidates shall furnish, before each test, proof of identity, which the examiners have the right to demand.

A barograph shall be carried on all practical tests, and the graph signed by the two examiners shall be attached to their report.

11.—CERTIFICATE FOR NAVIGATORS.—The candidate must pass a theoretical and practical examination in the following:

(a) Practical Astronomy

True and apparent movements of the celestial bodies.

Different aspects of the celestial sphere.

Hour angles, mean, true and astronomical time.

Shape and dimensions of earth.

Star globes and maps.

Methods of determining latitude, longitude, time and azimuth.

(b) Navigation

Maps and charts—how to read them.

Compass—magnetic meridian—declination, deviation, variation.

Courses—bearings—and their corrections.

Compensation of compasses (technical and practical).

Calculations of azimuth.

Flight by dead reckoning—measure of the relative speed—drift, traverse table.

Chronometer—chronometer rate—comparisons.

Sextants—adjustments.

Nautical almanac.

Determination of positions by means of bearings and altitudes of stars.

Knowledge of great circle navigation.

Aeronautical navigational instruments.

(c) General Knowledge

International rules for aerial and maritime navigation.

Practical knowledge of international aerial legislations.

Good knowledge of meteorology and of weather charts.

I—Rules as to Lights and Signals

1.—The rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such time no other lights which may be mistaken for the prescribed navigation lights shall be exhibited. The said prescribed navigation lights must not be dazzling.

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2.—A flying machine when in the air, or manœuvring on land or water under its own power, shall carry the following lights:—

(a) Forward, a white light, visible in a dihedral angle of two hundred and twenty degrees bisected by a vertical plane through the line of flight, and of such a character as to be visible at a distance of at least five miles;

(b) On the starboard side, a green light, so constructed and fixed as to show an unbroken light between two vertical planes, whose dihedral angle is one hundred and ten degrees when measured to the right from dead ahead, and of such a character as to be visible at a distance of at least three miles;

(c) On the port side, a red light, so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is one hundred and ten degrees when measured to the left from dead ahead, and of such a character as to be visible at a distance of at least three miles;

(d) The said green and red sidelights shall be fitted so that the green light shall not be seen from the port side, nor the red light from the starboard side;

(e) At the rear, and as far aft as possible, a white light shining rearwards, and visible in a dihedral angle of one hundred and forty degrees bisected by a vertical plane through the line of flight;

(f) In the case where, in order to fulfill conditions (a) to (e) above, the single light has to be replaced by several lights, the field of visibility of each of these lights should be so limited that in no case can more than one be seen at a time.

3.—The rules as to the lighting of flying machines shall apply to airships, subject to the following modifications:—

(a) All lights shall be doubled, the forward and aft lights vertically, and the side lights horizontally;

(b) Both lights of each pair forward and aft shall be visible at the same time.

The distance between each light comprising a pair shall not be less than six feet.

4.—An airship, when being towed, shall carry the lights referred to in rule 3, and in addition those specified in rule 6 for airships not under control.

5.—A flying machine when on the surface of the water and when not under control, that is to say, not able to manœuvre as required by the regulations for preventing collisions at sea, shall carry two red lights not less than six feet apart in a vertical line one over the other, and of such a character as to be visible all round the horizon at a distance of at least two miles. In addition, the side lights must be shown if the flying machine is under way.

6.—An airship which from any cause is not under control or which has voluntarily stopped her engines shall, in addition to the other specified lights, display conspicuously two red lights, one over the other approximately in a vertical line, not less than six feet apart and constructed to show a light in all directions and of such a character as to be visible at a distance of at least two miles.

By day an airship, when being towed, or which from any cause is not under control, shall display conspicuously two black balls or shapes,

each two feet in diameter, placed one over the other and approximately in a vertical line.

An airship moored or under way, but having voluntarily stopped its engines, shall display conspicuously by day a black ball or shape two feet in diameter, and shall be treated by other aircraft as being not under control.

7.—A free balloon shall carry one bright white light below the car at a distance of not less than twenty feet, and so constructed as to show an unbroken light in all directions and of such a character as to be visible at a distance of at least two miles.

8.—A fixed balloon shall carry in the same position as the white light mentioned in rule 7, and in lieu of that light, three lights in vertical line one over the other, not less than six feet apart. The highest and lowest of these lights shall be red, and the middle light shall be white and they shall be of such a character as to be visible in all directions at a distance of at least two miles.

In addition, the mooring cable shall have attached to it at intervals of one thousand feet, measured from the basket, groups of three lights similar to those mentioned in the preceding paragraph. In addition, the object to which the balloon is moored on the ground shall have a similar group of lights to mark its position.

By day the mooring cable shall carry in the same positions as the groups of lights mentioned in the preceding paragraph, and in lieu thereof, tubular streamers, not less than eight inches in diameter and six feet long, and marked with alternate bands of white and red eighteen inches in width.

9.—An airship, when moored near the

ground, shall carry the lights referred to in rules 2 (a) and (e) and 3.

In addition, if moored but not near the ground, the airship, the mooring cable, and the object to which moored, shall be marked in accordance with the provisions of rule 8, whether by day or by night.

Sea anchors or drogues used by airships for mooring purposes at sea are exempt from this rule.

10.—A flying machine stationary on land or water, but not anchored or moored, shall carry the lights specified in rule 2.

11.—In order to prevent collisions with surface craft:—

(a) A flying machine when at anchor or moored on the water shall carry forward where it can best be seen a white light so constructed as to show an unbroken light visible all round the horizon at a distance of at least one mile.

(b) A flying machine of one hundred and fifty feet or upwards in length, when at anchor or moored on the water, shall in the forward part of the flying machine carry one such light, and at or near the stern of the flying machine, and at such a height that it shall be not less than fifteen feet lower than the forward light, another such light.

The length of a flying machine shall be deemed to be the overall length.

(c) Flying machines of one hundred and fifty feet or upwards in span, when at anchor or moored in the water, shall carry in addition at each lower wing tip one such light as specified in (a) of this rule.

The span of a flying machine shall be

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deemed to be the maximum lateral dimension.

12.—In the event of the failure of any of the lights specified under these rules to be carried by aircraft flying at night, such aircraft shall land at the first reasonably safe opportunity.

13.—Nothing in these rules shall interfere with the operation of any special rules made by the Government of any nation with respect to the additional station and signal lights for two or more military aircraft or for aircraft in formation, or with the exhibition of recognition signals adopted by owners of aircraft which have been authorised by their respective Governments and duly registered and published.

14.—(a) Aircraft proposing to land at night on aerodromes having a ground control shall before landing—

Fire a green Very's light or flash a green lamp, and in addition shall make by international Morse code the letter group forming its call sign.

(b) Permission to land will be given by the repetition of the same call sign from the ground, followed by—

A green Very's light, or flashing a green lamp.

15.—The firing of a red Very's light or the display of a red flare from the ground shall be taken as an instruction that aircraft are not to land.

16.—An aircraft compelled to land at night shall, before landing, fire a red Very's light, or make a series of short flashes with the navigation lights.

17.—When an aircraft is in distress and requires assistance, the following signals shall

be used or displayed, either together or separately:

(1) The international signal, SOS, by means of visual or wireless signals;

(2) The international code flag signal of distress, indicated by NC;

(3) The distant signal, consisting of a square flag, having either above or below it a ball, or anything resembling a ball;

(4) A continuous sounding with any sound apparatus;

(5) A signal, consisting of a succession of white Very's lights, fired at short intervals.

18.—In fog, mist, falling snow, or heavy rainstorm, whether by day or night, an aircraft on the water shall make the following sound signals with any sound apparatus:—

(a) If not anchored or moored, a sound at intervals of not more than two minutes, consisting of two blasts of about five seconds duration, with an interval of about one second between them;

(b) If at anchor or moored a sound at intervals of not more than one minute, consisting of one blast of about five seconds duration.

II—Rules of the Air

(a) General Rules of the Air

19.—Flying machines shall always give way to balloons, fixed or free, and to airships. Airships shall always give way to balloons, whether fixed or free.

20.—An airship when not under its own control shall, for the purpose of the rules of the air, be classed as a free balloon.

21.—A motor-driven aircraft must always

manceuvre according to these rules as soon as it is apparent that, if it pursued its course, it would pass at a distance of less than 200 yards from any part of another aircraft.

22.—When two motor-driven aircraft are meeting end on, or nearly end on, each shall alter its course to starboard.

23.—When two motor-driven aircraft are on courses which cross the aircraft which has the other on its own starboard side shall keep out of the way of the other.

24.—An aircraft overtaking any other shall keep out of the way of the overtaken aircraft by altering its own course to the right, and must not pass by diving.

Every aircraft coming up with another aircraft from any direction more than one hundred and ten degrees from ahead, *i.e.*, in such a position with reference to the aircraft which it is overtaking that at night it would be unable to see either of that aircraft's sidelights, shall be deemed to be an overtaking aircraft; and no subsequent alteration of the bearing between the two aircraft shall make the overtaking aircraft a crossing aircraft within the meaning of these rules, or relieve it of the duty of keeping clear of the overtaken aircraft until it is finally past and clear.

As by day the overtaking aircraft cannot always know with certainty whether it is forward or abaft this direction from the other aircraft, it should, if in doubt, assume that it is an overtaking aircraft and keep out of the way.

25.—Where by any of these rules one of the two aircraft is to keep out of the way, the other shall keep its course and speed. When, in consequence of thick weather or other causes, such

aircraft finds itself so close that collision cannot be avoided by the action of the giving-way aircraft alone, it shall take such action as will best aid to avert collision.

26.—Every aircraft which is directed by these rules to keep out of the way of another aircraft shall, if the circumstances of the case admit, avoid crossing ahead of the other.

27.—In following an officially recognised aerial route, every aircraft, when it is safe and practicable, shall keep to the right side of such route.

28.—Aircraft on land or water about to ascend shall not attempt to "take off" until there is no risk of collision with alighting aircraft.

29.—Every aircraft in a cloud, fog, mist, or other conditions of bad visibility shall proceed with caution, having careful regard to the existing circumstances and conditions.

30.—In obeying and construing these rules, due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

31.—The dropping of ballast other than fine sand or water from aircraft in the air is prohibited.

(b) Regulations for Air Traffic on and in the Vicinity of Licensed Aerodromes

32.—At every licensed aerodrome there shall be a flag hoisted in a prominent position which shall indicate that if an aeroplane about to land finds it necessary to make a circuit or partial circuit such circuit shall be left-handed (anti-

clockwise) or right-handed (clockwise) according to the colour of the flag. A blue flag shall indicate a right-handed circuit—*i.e.*, that the flag is kept to the starboard side or side which carries the green light of the aircraft, and a red flag shall indicate a left-handed circuit—*i.e.*, that the red flag is kept to the port side or side which carries the red light of the aeroplane.

Similarly aeroplanes leaving a licensed aerodrome shall conform to the circuit as indicated by the flag.

33.—When an aeroplane starts from a licensed aerodrome it shall not turn until five hundred yards distance from the nearest point of the aerodrome, and the turning then made must conform with the circuit regulation.

34.—All aeroplanes flying between five hundred and one thousand yards distance from the nearest point of a licensed aerodrome shall conform to the circuit law, unless such aeroplanes are flying at a greater height than six thousand five hundred feet.

35.—Side-slip and trick landings are prohibited at licensed aerodromes. Aircraft are prohibited from indulging in trick flying within a distance in any direction of at least two thousand yards from the nearest point of such aerodromes.

36.—At every licensed aerodrome the direction of the wind shall be clearly indicated by one or more of the recognised methods—*e.g.*, landing tee, conical streamer, smudge fire, etc.

37.—Every aeroplane, when taking off or alighting on a licensed aerodrome, shall do so up-wind, except when the natural conditions of the aerodrome do not permit.

38.—In the case of aeroplanes approaching

licensed aerodromes for the purpose of landing, the aeroplane flying at the greater height shall be responsible for avoiding the aeroplane at the lower height, and shall, as regards landing, observe rule 24 as to passing.

39.—Aeroplanes showing signals of distress shall be given free way in attempting to make a landing on a licensed aerodrome.

40.—Every licensed aerodrome shall be considered to consist of three zones when looking up-wind. The right-hand zone shall be the taking-off zone and the left-hand shall be the landing zone. Between these two there shall be a neutral zone. An aeroplane when landing should attempt to land as near as possible to the neutral zone, but in any case on the left of any aeroplanes which have already landed. After slowing up or coming to a stop at the end of its landing run, an aeroplane will immediately taxi into the neutral zone. Similarly an aeroplane when taking off shall keep as far as possible towards the right of the taking-off zone, but shall keep clear to the left of any aeroplanes which are taking off or about to take off.

41.—No aeroplane shall commence to take off until the preceding aeroplane is clear of the aerodrome.

42.—The above rules shall apply equally to night landings on licensed aerodromes, when the signals shall be as follows:—

(a) A red light shall indicate a left-hand circuit and a green light shall indicate a right-hand circuit. The right-hand zone will be marked by white lights placed in the position of an “L,” and the left-hand zone will be similarly marked. The “L’s” shall be back to back, that is to say that the long sides of

the "L's" will indicate the borders of the neutral zone. The direction of landing shall invariably be along the long arm of the "L" and towards the short arm. The lights of the "L's" should be so placed that the lights indicating the top extremity of the long arm shall be the nearest point on the aerodrome upon which an aeroplane can safely touch ground. The lights indicating the short arm of the "L" should indicate the limit of safe landing ground for the aeroplanes, that is, that the aeroplane should not over-run the short arm.

(b) Where it is desired to save lights and personnel, the following system may be used:

Two lights shall be placed on the windward side of the aerodrome to mark the limits of the neutral zone mentioned in rule 40, the line joining the lights being at right angles to the direction of the wind; two more lights shall be placed as follows: one on the leeward side of the aerodrome on the line drawn paral-

lel to the direction of the wind and passing midway between the two lights on the windward side, for showing the extent of the aerodrome and the direction of the wind, and the other shall be placed midway between the two lights marking the limits of the neutral zone.

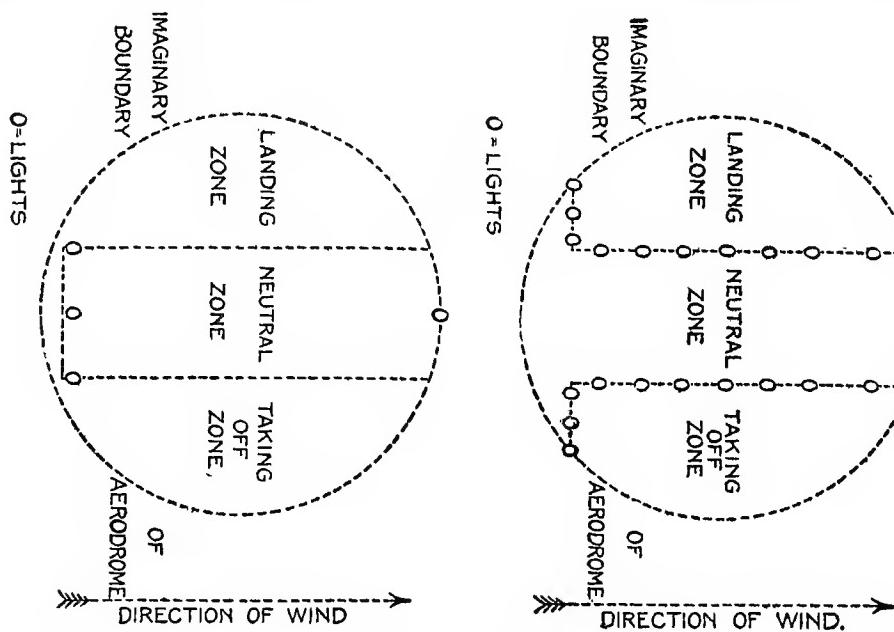
Additional lights may be symmetrically put along the boundary lines of the neutral zone and on the ends of the taking-off and landing zones, on the line through the three lights on the windward side.

43.—No fixed balloon, kite or moored airship shall be elevated in the vicinity of any aerodrome without a special authorisation.

44.—All licensed aerodromes must be protected on land within a zone of five hundred yards by means of suitable markings on obstacles dangerous to flying.

(c) Miscellaneous

45.—Every aircraft manœuvring under its own power on the water shall conform to the



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regulations for preventing collisions at sea, and for the purposes of those regulations shall be deemed to be a steam vessel, but shall carry the lights specified in these rules, and not those specified for steam vessels in those regulations. The sound signals specified in those regulations shall not be used by or apply to such aircraft, except as specified in rules 17 and 18 above.

46.—Nothing in these rules shall exonerate any aircraft, or the owner or personnel thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper look-out, or of the neglect of any precaution which may be required by the ordinary practice of the air, or by the special circumstances of the case.

47.—Nothing in these rules shall interfere with the operation of any special rule or rules duly made and published relative to navigation of aircraft in the immediate vicinity of any aerodrome or other place, and it shall be obligatory on all owners and personnel of aircraft to obey such rules.

Schedule VIII—Rules as to Aircraft Arriving in or Departing from the United Kingdom

Preliminary

1.—(1) For the purposes of the rules in this schedule the following aerodromes are appointed aerodromes, that is to say:—

NEW HOLLAND, Lincolnshire;
HADLEIGH, Suffolk;
LYMPNE, Kent;
HOUNSLOW, Middlesex.

Provided that the Secretary of State may by direction add any aerodrome to the list of appointed aerodromes or remove any aerodrome from that list.

(2) For the purposes of the rules in this schedule—

“Importer” has the same meaning as in the Customs Consolidation Act, 1876;

“Commissioners” means Commissioners of Customs and Excise;

“Examination station” means a space at an appointed aerodrome approved by the Commissioners as an examination station;

“Pilot” includes person in charge.

Other expressions have the same meaning as in the general provisions of these regulations.

Arrival at and Departure from Appointed Aerodromes

2.—No aircraft entering the United Kingdom from abroad shall land for the first time in the United Kingdom except at an appointed aerodrome: Provided that this rule shall not apply where an aircraft is compelled to land before arriving at an appointed aerodrome, owing to accident, stress of weather, or unavoidable cause, in which event the procedure laid down in rule 21 (hereafter) will be followed.

3.—No aircraft shall fly to a place outside the United Kingdom unless it has departed from an appointed aerodrome.

4.—(1) No person in any aircraft entering the United Kingdom shall carry or allow to be carried in the aircraft—

(a) any goods the importation of which is prohibited by the laws relating to Customs;

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(b) any mails, except with the permission in writing of the Postmaster-General.

(2) No person in any aircraft entering the United Kingdom shall break or alter any seal placed upon any part of the aircraft or upon any goods therein by a Customs officer at the aerodrome at which he departed for the United Kingdom.

5.—No aircraft shall enter or leave the United Kingdom, having any secret or disguised place adapted for concealing goods.

6.—The pilot of any aircraft arriving at an appointed aerodrome from a place outside the United Kingdom shall, on landing, forthwith take his aircraft to the examination station at that aerodrome; provided that a pilot shall not be deemed to have contravened or failed to comply with this rule if he proves that circumstances over which he had no control prevented him from taking his aircraft to the examination station, and that, after the report required by rule 7 (hereunder) had been duly made by him, all goods carried in the said aircraft were removed to the examination station in the presence of an officer of Customs and Excise or some person duly authorised by the Secretary of State.

7.—Within twenty-four hours after the landing at any appointed aerodrome of an aircraft from a place outside the United Kingdom the pilot shall—

(a) make a report to the proper officer of Customs and Excise in the form prescribed by the Commissioners; and

(b) truly furnish the several particulars required by such form; and

(c) deliver to such officer with such report his log book, manifest, and declaration of the

goods on board his aircraft signed by the proper Customs officer at the aerodrome from which he departed for the United Kingdom; and

(d) land at such aerodrome for examination of baggage all passengers carried in such aircraft, and, after making such report, shall produce, and, if required to do so, shall land, all goods in such aircraft for examination.

8.—If at any aerodrome or other place within the United Kingdom goods or passengers are loaded for conveyance by air to an appointed aerodrome, the pilot shall obtain from the proprietor of the aerodrome of departure a certificate of departure in the form prescribed by the Secretary of State and the Commissioners, and on arriving at the appointed aerodrome the aircraft, and all goods and passengers carried therein, shall, on production of such certificate, be exempt from inspection by an officer of Customs and Excise, unless such officer has reason to suspect that the aircraft has, since the issue of such certificate, called at a place outside the United Kingdom.

9.—The pilot of every aircraft in which goods are to be exported shall, before any goods be taken on board, deliver to the proper officers of Custom and Excise a note of departure for a foreign destination in the form prescribed by the Commissioners, in which shall be truly stated the particulars required by such form.

10.—(1) Every pilot of an aircraft carrying goods to any place outside the United Kingdom shall deliver to the proper officer of Customs and Excise at an appointed aerodrome, together with any log books belonging to the aircraft, an application for clearance from that aerodrome in the

form prescribed by the Commissioners, in duplicate, and also, if the aircraft carries any goods, a manifest and declaration in the form prescribed by the Commissioners, declaring the goods and stores on such aircraft, and shall truly state therein the particulars required by such forms respectively; and such forms, when signed by such officer, shall be the clearance and authority for the aircraft to proceed to its foreign destination.

(2) No pilot shall depart in any such aircraft from the United Kingdom until he has obtained such authority, or shall, after obtaining such authority, call at any other place in the United Kingdom before proceeding to his foreign destination. Any pilot intending to land at one or more appointed aerodromes before proceeding to his foreign destination shall apply for the said clearance and authority at the last appointed aerodrome at which he lands.

Importation, Entry, and Unloading of Goods

11.—No person importing goods in an aircraft shall bring the goods into any place in the United Kingdom other than an appointed aerodrome, or shall unload the goods from any aircraft except at an examination station (unless such goods are unloaded in the presence of an officer of the Customs and Excise under the provisions of rule 6 above) and shall not unload the goods except between such hours as the Commissioners prescribe, or remove the goods from an examination station unless the goods have first been duly entered in manner provided by these rules and produced to the proper officer of Customs and Excise and duly cleared by him.

12.—No person shall remove from any air-

craft any goods imported therein until the report required by rule 7 (above) has been made, and the authority of the proper officer of Customs and Excise has been obtained.

13.—The importer of any goods imported in aircraft shall deliver to the collector of Customs and Excise in whose district the aerodrome of importation is situated an entry of such goods in accordance with the provisions of the Customs Acts, and shall truly furnish thereon the several particulars required by the form of entry, and shall pay to such collector all duties chargeable thereon at the times and in the manner prescribed by the said Acts; provided that no entry shall be required in respect of diamonds or bullion or the baggage of passengers.

14.—All goods imported into an appointed aerodrome in any aircraft shall be duly entered and unladen within seven days from the time of the arrival of such aircraft at that aerodrome or within such further period as the Commissioners may allow.

15.—All goods imported in aircraft which have not been examined and cleared by the proper officer of Customs and Excise shall be stored in a transit shed at the appointed aerodrome, and no person shall remove such goods from the transit shed before examination and clearance by such officer.

Exportation of Goods

16.—(1) The exporter of any goods intended for exportation in aircraft shall deliver to the proper officer of Customs and Excise at the appointed aerodrome from which such aircraft is cleared to its foreign destination, an entry in the form prescribed by the Commissioners,

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and shall truly state in such form the particulars hereby required; and such form when signed by the proper officer of Customs and Excise shall be the clearance and authority for the exportation of such goods.

(2) No person shall export goods on such aircraft until such authority has been given by the proper officer of Customs and Excise.

17.—No person shall without the consent of the proper officer of Customs and Excise unload from any aircraft any goods loaded thereon for exportation which have been cleared under rule 16 above, or open, alter, or break any lock or mark or seal placed by any officer of Customs and Excise on any goods in any aircraft about to depart from the United Kingdom.

General Provisions

18.—No person shall make any signal to or from an aircraft entering or leaving the United Kingdom except such signals as are authorised by these regulations; provided that no offence shall be deemed to be committed under this rule if the person making such signal proves that the signal was not given for the purpose of evading or of assisting any person in evading these rules.

19.—If any officer of Customs and Excise in the execution of his duty boards any aircraft in any place, the pilot thereof shall not convey him in any aircraft away from such place without his consent.

20.—No dutiable goods shall be removed in aircraft from the Isle of Man to Great Britain or Ireland except from an appointed aerodrome and with the consent of the proper officer of Customs and Excise.

21.—If any aircraft arriving from a place

outside the United Kingdom shall land in any place other than an appointed aerodrome, the pilot shall forthwith report to an officer of Customs and Excise or police constable, and shall, on demand, produce to such officer or police constable the log books belonging to the aircraft, and shall not allow any goods to be unloaded therefrom without the consent of an officer of Customs and Excise, and no passenger thereof shall leave the immediate vicinity without the consent of an officer of Customs and Excise or police constable. If such place of landing shall be an aerodrome the pilot shall forthwith report the arrival of the aircraft and the place whence it came to the proprietor of the aerodrome, and the proprietor of the aerodrome shall forthwith report the arrival of the aircraft to an officer of Customs and Excise, and shall not allow any goods to be unloaded therefrom or any passenger thereof to leave the aerodrome without the consent of such officer.

22.—(1) The proprietor of any aerodrome shall at all times permit any officer of Customs and Excise to enter and inspect his aerodrome and all buildings and goods thereon.

(2) The pilot of any aircraft shall permit any officer of Customs and Excise at any time to board and inspect his aircraft and any goods laden thereon.

(3) The importer or exporter of any goods imported or exported in aircraft shall produce such goods to the proper officer of Customs and Excise at the aerodrome of importation or exportation, as the case may be, and permit him to inspect such goods.

23.—Any provisions for the time being in force

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of the Aliens Restriction Order or of the Defence of the Realm Regulations with respect to persons arriving in or departing from the United Kingdom by sea, shall apply to persons arriving or departing by air as if the same were herein set out, with such modifications as are necessary for adapting them to such purpose, and in particular with the substitution of appointed aerodromes for the approved ports specified in the Aliens Restriction Order.

24.—All persons importing or exporting or concerned in importing or exporting goods, mails, or passengers, into or from the United Kingdom in aircraft and all pilots of aircraft arriving in or departing from the United Kingdom shall observe and comply with the provisions of sections 53, 76, 102, 104, and 118 of the Customs Consolidation Act, 1876, as if any references in such provisions to ships or vessels and the masters or captains thereof, and to the loading or unloading of goods thereon or therefrom, including references to aircraft and the pilots thereof, and to the loading or unloading of goods thereon or therefrom, and as if references in such provisions to a quay included a reference to an examination station.

AIR NAVIGATION DIRECTIONS

The Air Navigation Regulations, 1919, provide for the issue of supplementary "Directions" as may be necessary, and the following Directions are accordingly notified for the information of all concerned:—

I—Registration of Aircraft

1. With reference to Regulation 1 (1) and Schedule I, applications for registration should

be made to the Secretary, Air Ministry, London, W.C.2.

2. Application forms will be supplied on demand.

II—Licensing of Personnel

1. With reference to Regulation 1 (3) and Schedule II, applications for licenses should be made to the Secretary, Air Ministry, London, W.C.2.

2. Any member of the personnel of an aircraft, other than those specifically mentioned in Schedule II, can obtain on application to the Secretary, Air Ministry, particulars of the requirements for obtaining a licence.

3. Application forms will be supplied on demand.

Medical Requirements

4. Every applicant before obtaining a licence as a pilot, navigator or engineer of aircraft engaged in public transport will present himself for examination by specially qualified men appointed by or acting under the authority of the Secretary of State.

5. Medical supervision, both for the selection and the maintenance of efficiency, shall be based upon the following requirements of mental and physical fitness:—

(a) Good family and personal history, with particular reference to nervous stability. Absence of any mental, moral or physical defect which will interfere with flying efficiency.

(b) *Minimum age* for pilots and navigators engaged in public transport shall be nineteen (19) years.

(c) *General Surgical Examination*—The applicant must neither suffer from any

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wound, injury or operation, nor possess any abnormality, congenital or otherwise, which will interfere with the efficient and safe handling of aircraft.

(d) *General Medical Examination*—The applicant must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys and nervous system capable of withstanding the effects of altitude and also the effects of prolonged flight.

(e) *Eye Examination*—The applicant must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two (2) dioptres of latent hypermetropia; muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye, and must possess normal colour perception.

(f) *Ear Examination*—The middle ear must be healthy. The applicant must possess a degree of auditory acuity compatible with the efficient performance of his duties.

(g) The vestibular mechanism must be intact, and neither unduly hypersensitive nor hyposensitive.

(h) *Nose and Throat Examination*—The applicant must possess free nasal air entry on either side, and not suffer from serious acute or chronic affections of the upper respiratory tract.

6. The successful applicant will receive a medical certificate of acceptance, which must be produced before the licence can be issued.

7. In order to insure the maintenance of effi-

cency, every applicant shall be re-examined periodically, at least every six months, and the findings attached to his original record. In case of illness or accident, also, a pilot, navigator or engineer shall be re-examined and pronounced fit before resuming aerial duties. The date and result of each re-examination shall be recorded on the applicant's flying certificates.

8. No applicant who, before May 1, 1919, has given proof of his flying ability, shall, so long as he retains such ability, be necessarily disqualified because he fails to fulfil all of the above requirements.

9. Applications for medical examination should be made to the Secretary, Air Ministry, London, W.C.2.

Flying Certificates

10. *Certificates for Pilots of Flying Machines*:

“A” Flying Certificate for private pilots (not valid for flying passenger or goods aircraft).

“B” Pilot’s Flying Certificate for flying passenger or goods aircraft.

“A” Private Pilot’s Flying Certificate

(I) Practical Tests

In each practical test the candidate must be alone in the flying machine.

(a) *Test for Altitude and Gliding Flight*—A flight without landing, during which the pilot shall remain for at least an hour at a minimum altitude of 6,000 feet above the point of departure. The descent shall finish with a glide, the engines cut off at 4,500 feet above the land-

ing ground. The landing shall be made within 150 yards or less of a point fixed beforehand by the official examiners of the test without starting the engine again.

(b) *Tests of Skill*—A flight without landing around two posts (or buoys) situated 500 yards apart, making a series of five figure-of-eight turns, each turn reaching one of the two posts (or buoys). This flight shall be made at an altitude of not more than 600 feet above the ground (or water) without touching the ground (or water). The landing shall be effected by:—

- (i) Finally shutting off the engine or engines at latest when the aircraft touches the ground (or water).
- (ii) Finally stopping the flying machine within a distance of 50 yards from a point fixed by the candidate before starting.

(II) Technical Examination

(a) Rules as to lights and signals, and rules of the air.

(b) Rules for aerial traffic in the vicinity of aerodromes.

"B" Pilot's Flying Certificate for Flying Passenger or Goods Aircraft

(I) PRACTICAL TESTS

In each practical test the candidate must be alone in the flying machine.

(a) The tests for altitude and gliding flight and for skill are the same as those required for a private pilot's flying certificate. Candidates already in possession of the latter certificate are not required to pass these tests again.

(b) *Test of Endurance*—A cross-country or

oversea flight of at least 200 miles, and the final landing shall be made at the point of departure.

This flight shall be carried out by the same aircraft within eight hours, and include two obligatory landings, during which the machine must come to rest, which shall not be at the point of departure, but which shall be fixed by the judges.

At the time of departure the candidate shall be informed of his course and furnished with a map. The judges will decide if the course has been correctly followed.

(c) *Night Flying*—A thirty minutes' flight at an altitude of at least 1,500 feet, made between two hours after sunset and two hours before sunrise.

(II) TECHNICAL EXAMINATION

After satisfactory practical tests have been passed, candidates will submit themselves when summoned to examination on:—

- (a) Flying machines.
- (b) Engines.
- (c) Navigation.

(a) Flying Machines

Aeroplanes and Seaplanes—Theoretical abstract knowledge of the resistance of the air in connection with planes, rudders, elevators and propellers; functions of the different parts of the machine and of their controls.

Assembling of aeroplanes, propellers, undercarriages, rudders, elevators and their controls.

Practical tests on rigging.

(b) Engines

General knowledge of internal combustion engines, and their various functions; valve gear, carburation, ignition, exhaust.

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Characteristics of aero engines and a general idea of their construction, adjustment and assembling.

Causes of the faulty running of engines. Fuel and oils. Description of the details of the aero engines used. Adjustments, lubrication, upkeep, dissembling and assembling of the principal parts; causes of breakdown. Use of throttle and other controls.

Practical tests in running repairs.

(c) *Navigation*

Knowledge of rules as to lights and signals, rules of the air and rules for aerial traffic in the vicinity of aerodromes.

Practical knowledge of the special conditions of aerial traffic.

Map reading, use of compass, location of position.

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The practical tests shall be carried out within a maximum period of one month.

They may be carried out in any order, and each may be attempted twice. They shall be witnessed by at least two properly accredited examiners who will hand over the official reports to the proper authorities.

The official reports will give full details of the flights, especially of the landings. The candidates shall furnish, before each test, proof of identity, which the examiners have the right to demand. A barograph shall be carried on all practical tests, and the graph signed by the two examiners shall be attached to their report.

11. Certificate for Navigators—The candidate must pass a theoretical and practical examination in the following:—

(A) *Practical Astronomy*

True and apparent movements of the celestial bodies.

Different aspects of the celestial sphere.

Hour angles, mean, true and astronomical time.

Shape and dimensions of the earth.

Star globes and maps.

Methods of determining latitude, longitude, time and azimuth.

(B) *Navigation*

Maps and charts—how to read them.

Compass—magnetic meridian—declination, deviation, variation.

Courses—bearings—and their corrections.

Compensation of compasses (technical and practical).

Calculations of azimuth.

Flight by dead reckoning—measure of the relative speed—drift, traverse table.

Chronometer—chronometer rate—comparisons.

Sextants—adjustments.

Nautical almanac.

Determination of positions by means of bearings and altitude of stars.

Knowledge of great circle navigation.

Aeronautical navigational instruments.

(C) *General Knowledge*

International rules for aerial and maritime navigation.

Practical knowledge of international aerial legislation.

Good knowledge of meteorology and of weather charts.

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III—Certificates of Airworthiness

1. With reference to Regulation 2 (1) and Schedule III, applications for certificates of airworthiness should be made to the Secretary, Air Ministry, London, W.C.2.

2. Application forms will be supplied on demand.

Type Aircraft

3. Subsequent to the forwarding to the Secretary, Air Ministry, of an application form duly completed for a certificate of air-worthiness for a type aircraft, the applicant shall forward to the Director of Research, Air Ministry, general arrangement drawings of the proposed aircraft, together with such particulars of load, fuel, engines, etc., as will enable a preliminary opinion to be formed as to general safety.

4. The applicant shall forward subsequently such drawings and particulars of the proposed aircraft as may be necessary for the checking in detail of the safety of the aircraft.

The information and drawings required for this purpose should be, where applicable, in accordance with forms to be supplied on application. (C.O. Forms 12 and 13.)

(Blue prints or rough sketches may be sufficient to enable the said checking to proceed provided they are fully dimensioned.)

5. The applicant may proceed with the construction of any part or parts of the aircraft as and when these are approved by the Secretary of State.

6. The workmanship and materials of construction of the aircraft shall be approved by the Secretary of State in accordance with detailed directions in para. 20 below.

7. On completion of the aircraft, flying trials will be carried out by the applicant's or constructor's pilot in the presence of representatives of the Secretary of State.

8. After the satisfactory completion of the check calculations, inspection, and applicant's flying trials, and after any modifications considered necessary for safety have been completed to the satisfaction of the Secretary of State, the applicant will be instructed to deliver the aircraft to the official aerodrome for official trials.

9. At any time prior to the delivery of the aircraft for official trials, modifications to the aircraft may be made by the applicant, provided that full particulars and drawings of the proposed modifications are first submitted to the Director of Research, Air Ministry, and that such as affect the safety of the aircraft are approved by the Secretary of State.

10. During official trials, which may be attempted by a limited number of representatives of the applicant, the aircraft will be in the charge of the representatives of the Secretary of State, but the Secretary of State and/or his representatives shall not be liable for any loss or damage caused to such aircraft during official trials.

11. If any modifications are considered by the Secretary of State to be necessary for safety as a result of such official trials, such modifications shall be carried out by the applicant, and on completion thereof the aircraft shall be delivered, if required, for further official trials.

12. On the completion of official trials, the applicant will be notified, and reports on calculations and tests will be supplied to him by the Secretary of State on application. The aircraft will either be handed over to the applicant

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at the official aerodrome for removal, or will be delivered by an official pilot to an aerodrome selected by the applicant, and approved by the Secretary of State.

13. On the satisfactory completion of the official trials, and after the completion to the satisfaction of the Secretary of State of any modifications considered necessary for safety, a certificate of airworthiness will be issued. Prior to the issue of such certificate the applicant shall deliver to the Director of Research, Air Ministry, a complete set of working drawings (process tracings) of the aircraft.

Subsequent Aircraft

14. Following the receipt by the Secretary, Air Ministry, of an application form, duly completed, certificates of airworthiness for subsequent aircraft which conform in all essential respects with a type aircraft for which a certificate of airworthiness has previously been issued will be granted subject to the following conditions and procedure.

15. The applicant may make modifications (including change of engine type) to the aircraft and may depart from the approved complete set of working drawings (process tracings) of the type aircraft that are in the possession of the Secretary of State; but full particulars and drawings of the proposed modifications shall first be delivered to the Director of Research, Air Ministry, and such as affect the safety of the aircraft shall be approved by the Secretary of State.

16. During the construction of the aircraft

the inspection of the workmanship, construction and materials shall be as approved by the Secretary of State in accordance with detailed directions in para. 21 below.

17. In the case of an aircraft which in the opinion of the Secretary of State differs considerably from the type aircraft, or in the case of an aircraft built by a constructor not familiar with the type aircraft, on completion of the aircraft, the Secretary of State may require flying trials to be carried out, by the applicant's or constructor's pilot, in the presence of his representatives, and/or may require the aircraft to be delivered to the official aerodrome for additional trials. The procedure in this case will be in accordance with the procedure governing similar trials in the case of a type aircraft, as laid down in paras. 10, 11 and 12 hereof.

18. On the satisfactory completion of the aircraft and of any trials that may be required by the Secretary of State, and when any modifications considered necessary for safety have been completed to the satisfaction of the Secretary of State, a certificate of airworthiness will be issued.

Prior to the issue of such certificate, the applicant shall deliver to the Director of Research, Air Ministry, a complete set of working drawings (process tracings) of any modifications to or departure from the type aircraft.

19. In the foregoing directions the term "aircraft" includes the aircraft and all equipment (unless the context otherwise implies), except that working drawings will not be required for engines or equipment of approved types.

Method of Approval of Workmanship and Materials

20. Type Aircraft

(a) Inspection of type aircraft will be carried out by representatives of the Secretary of State.

(b) The Director of Aircraft Inspection will accept wherever in his opinion possible the inspection of details, components and/or materials for type aircraft made by employees of the constructor under the supervision of his representative, but each component will be finally inspected and approved by a representative of the Director of Inspection, who will co-operate with the constructor's inspecting staff.

Constructors must notify Director of Aircraft Inspection seven days before commencing work on any part of the aircraft, the inspection of which is necessary prior to further work.

(c) The Constructor must also fulfil the conditions detailed hereunder for subsequent aircraft.

21. Subsequent Aircraft

(a) Constructors must satisfy the Secretary of State that their inspecting staff is such as to ensure that aircraft passed by them conform in all essential respects to the type design.

(b) Constructors must purchase material to the specifications approved for the type design, and must arrange that each and every batch of such material is proved to comply with such specifications by suitable examination, sampling and testing, as may be approved by the Director of Aircraft Inspection.

(c) Constructors must make such arrangements at their works as will preclude the use of

material other than that approved as in para. (b) above.

(d) Constructors' inspecting staffs, referred to in 21 (a) above, must stamp or otherwise provide means for the identification of each and every detail, in such a way that the individual responsible for such approval can subsequently be traced, selective inspection being adopted where considered possible.

(e) Constructors must issue only details or parts approved as in para (d) above to the shops for assembly into components.

(f) Constructors must maintain an efficient process inspection during such work of assembly, and record such inspection on a process card for each component. Every component must be finally inspected by a qualified member of their inspecting staff, who will stamp the component in such a way that he may afterwards be identified, and will also sign the process card.

(g) Constructors' methods of carrying out the following operations must be approved by the Director of Aircraft Inspection, or other recognized authority, viz.: Heat-treatment of steel, seasoning and conversion of timber, glueing of important parts, and doping.

(h) Constructors must ensure that all instruments and other parts affecting airworthiness purchased from sub-contractors have been inspected and approved in accordance with these conditions.

(i) Constructors (aircraft or engine as may be arranged) must ensure that all engines have been inspected and approved in accordance with these conditions, and further, that they have satisfactorily undergone such bench tests as are

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required by the Secretary of State, and for this purpose that suitable test stands and accessories are provided to the satisfaction of the Director of Aircraft Inspection.

(j) Aircraft constructors must carry out an efficient inspection of the installation of all engines, instruments and parts that are fitted by them into the aircraft, such inspection to ensure that they function correctly, the individual responsible being indicated by a signature on the process card referred to above.

(k) Constructors must limit the power of their inspection staff to grant concessions to matters which do not affect the weight, the strength or the functioning of the part. Should any of these points be affected, the matter must be referred to the designer of the aircraft, and if affecting the type design, to the Director of Research as laid down for modifications to type designs.

IV—Persons Competent to Undertake Periodical Inspection and Overhaul and Examination Before Each Flight of Aircraft

1. With reference to Regulation 2 (1) and Schedule III (3 and 5-10), the following is the procedure for any person desirous of being licensed as a competent person, hereinafter referred to as "ground engineer," to undertake the inspection of periodic overhauls of aircraft required to be certified as airworthy, or as a competent person to examine such aircraft before each flight.

2. Applications for licences should be made to the Secretary, Air Ministry, London, W.C.2.

3. Application forms will be supplied on demand.

4. Subsequent to the forwarding to the Secretary, Air Ministry, of an Application Form for a Ground Engineer's License, the candidate will be requested to report to a local representative of the Director of Aircraft Inspection for examination. At this examination the candidate will be required to submit proof:—

(a) That he is not less than 21 years of age.

(b) That he has served at least two years as a mechanic or engineer on internal combustion engines, or a like period on aircraft construction or maintenance, or a period of not under three years on joint aero engine and aircraft construction and maintenance.

5. A candidate may apply to be licenced as a ground engineer to overhaul and inspect *all* flying machines and/or engines after overhaul and each day before flight; or may apply for a licence limited to the inspection of *any* named type or types of flying machine, or engine either after overhaul and/or each day before flight.

6. Candidates will be required to submit proof of knowledge:—

(a) For Engines: Of the general principles of internal combustion engines applied to aircraft, including the general principles of ignition, carburation, lubrication and cooling; knowledge of the inspection, testing and adjustments necessary for the installation and functioning of the complete power unit in the aircraft; and the capacity to supervise, or inspect running repairs and/or overhaul of particular engines.

(b) For Flying Machines: The general

principles of construction, rigging, trueing-up and adjustment of flying machines; a detailed knowledge of construction, adjustments, maintenance and final inspection of the flying machine's components; and the capacity to supervise, or inspect running repairs, and/or the overhaul of specified types of flying machines.

7. The examination may be in part written, and in part oral. Candidates may be required to give practical proof of knowledge.

8. Aircraft certified daily by such licensed ground engineers will be periodically re-inspected by a person or persons duly authorised by the Secretary of State, who reserves the right to suspend or revoke licenses granted as above, should such certified aircraft be deemed by him as a result of such examination to be unsafe.

9. Ground engineers certifying flying machines or engines as airworthy after overhaul, must be in a position to certify that all the conditions required for the inspection of subsequent aircraft during construction that apply to the overhaul have been carried out. The Secretary of State reserves the right to suspend or revoke the license of the ground engineer responsible for certifying that the overhaul has been correctly carried out, should a test inspection be deemed by the former to indicate that the flying machine is not airworthy.

10. Ground engineers' licenses will be issued at a charge of 5s., and will be valid for a period of twelve months, and will then be subject to renewal. The Secretary of State reserves the right to re-examine the candidate for renewal, if considered necessary.

11. In the event of any applicant being re-

quired to undergo a practical examination, a further fee of one guinea will be charged.

12. Certificate No....

PILOT'S CERTIFICATE OF GENERAL FITNESS OF AIRCRAFT BEFORE FLIGHT

Flying Machine Type.... Registration No...
Preparatory to Flight from..... on.....
..... Time to

Loading

Total weight of the aircraft including all items of load does not exceed..... lbs.

Loading (including placing of passengers) such that the centre of gravity of the aircraft is within the specified limits..... Petrol, oil and water sufficient for proposed journey.....

Officers and Crew

<i>Name</i>	<i>Duty</i>	<i>License No.</i>
.....
.....
.....

Number of passengers.....

This airship is *considered fit* in every way for the proposed journey.

Signed.....

Date.....

Certificate No....

DAILY CERTIFICATE OF SAFETY OF AIRCRAFT
Flying Machine Type.... Registered No...
Inspection at..... on..... time.....

I hereby certify that I have this day examined the above flying machine and that I consider it safe in every way for flights today when loaded as specified in the Certificate of Airworthiness.

Signed..... (Ground Engineer)

Date.....

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I hereby certify that I have this day examined the engines, engine installations and accessories of the above flying machine, and that in my opinion they are in every way safe for flights today.

Signed.....(Ground Engineer)

Countersigned.....

Date.....

NOTE—Both certificates may be signed by the same individual if licensed for both flying machines and engines.

V—Instructions for Use of Log Books

1. With reference to Regulation 2 (3) and Schedule V, the several log books should contain the information shown below.

2. The constructor should fill in and sign the original entries in the log book, as far as he is in a position to do so. Subsequent entries should be made and signed by the pilot or competent person.

3. A copy of the certificate of airworthiness should be kept in the pocket at the end of the aircraft log book.

4. All entries to be in ink, except in the case of journey and signal log books; the entries for these may be made in pencil in a rough notebook, but should be entered in ink in the log book every twenty-four hours.

In event of any official investigation the rough notebook may be called for.

5. No erasures should be made in, nor pages torn from, any log book.

6. A copy of these instructions should be inserted in each log book.

I—JOURNEY LOG

(a) Type to which the aircraft belongs; its nationality and registration marks; the name, Christian names, nationality and residence of the owner; name of constructor and the carrying capacity.

(b) In addition for each journey:—

(i) The name, nationality and residence of the pilot and crew.

(ii) The place, date and hour of departure, the route followed, and all incidents *en route*, including landings and weather conditions.

II—AIRCRAFT LOG

(a) Type to which the aircraft belongs, its nationality and registration marks, the name, Christian names and nationality and residence of the owner, name of constructor and the carrying capacity, and capacity of tanks.

(b) Type and series number of engine, type of propeller, showing number, pitch, diameter and maker's name.

(c) Type of wireless apparatus fitted.

(d) Table showing the necessary rigging data for the information of persons in charge of the aircraft and of its maintenance.

(e) A fully detailed engineering record of the life of the aircraft, including all acceptance tests, overhauls, replacements, repairs and all work of a like nature (see specimen sheet, the form of which should be followed).

III—ENGINE LOG

A separate log book shall be kept for each engine and shall always accompany the engine. It shall contain the following particulars:—

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(a) Type of engine, series number, makers' name, power, normal and maximum revolutions of engine, date of acceptance and first date put into service; petrol consumption; oil consumption.

(b) Registration mark and type of aircraft in which the engine has been installed.

(c) A fully detailed engineering record of the life of the engine, including all acceptance tests, hours run, overhauls, replacements, repairs and all work of a like nature (see specimen sheet, the form of which should be followed).

IV—SIGNAL LOG

(a) Type to which the aircraft belongs, its nationality and registration marks; the name,

Christian names and nationality and residence of the owner.

(b) Place, date and time of the transmission or reception of any signal.

(c) Name or other indication of the person or station to whom a signal is sent or from whom a signal is received.

VI—R. A. F. Aerodromes and Seaplane Stations

1. With reference to Regulation 4 (4), the dues to be charged at R.A.F. aerodromes are as follows:—

A—Accommodation

The charge for accommodation will be based on the floor space occupied, i.e., the product of

SPECIMEN SHEETS
Aircraft Log

Date	Hour	Commanding Officer	Route	Time in Air Hours Mins.	Petrol consumed	Oil consumed	Water consumed	No. of passengers	Repairs or Replacements	Remarks	Signature of authorised person
			Brought forward							Time in the air since last over-haul:— hours mins. Date of:	
Carried forward.....											

Engine Log

Date	Hour	Engineer in charge	Revs. per min.		Time run	Defects found	Particulars of overhaul or replacement	Remarks	Signature of authorised person
			On ground	In air (state climbing or level)					
								Time run since last overhaul: hours mins. Date of:	

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span and overall length. With folder aircraft the span to be taken as the overall width when folded. Charges will be as follows:

	8 Hours or Less	Up to 24 Hours
	£ s. d.	£ s. d.
Small type, less than 900 sq. ft.....	0 2 6	0 5 0
Medium type, not exceeding 1,800 sq. ft.	0 5 0	0 10 0
Large type, over 1,800 sq. ft.....	1 0 0	1 0 0

Monthly Rate—Accommodation for monthly periods will be at rates of £5, £10 and £20 respectively. Any accommodation so reserved, but not made use of, to be available for hire to other aircraft. No refund to be made to the monthly lessee, unless he is thereby prevented from obtaining accommodation, in which case a proportionate refund will be made as in the opinion of the Secretary of State appears reasonable.

B—Landing Fees

These will be in respect of the cost of maintenance of the aerodromes, use of landing lights and beacons and supply of navigational information.

The charges will include ordinary attendance, e.g., guiding machines, starting propellers, refuelling, etc. (For pushing machines with stopped engines any considerable distance charges will be made in accordance with 3 (a) below.) At R.A.F. aerodromes where no attendance is available the charges will remain the same. The charges will be:—

	For Single Landing	For Books of 10 Coupons
	£ s. d.	£ s. d.
Small type	0 2 6	1 0 0
Medium type	0 5 0	2 0 0
Large type	0 10 0	4 0 0

Each coupon to permit of one landing on any R.A.F. aerodrome for a period of three months from date of issue. Coupons to be transferable between aircraft, but not between owners.

No extra landing fee will be charged in respect of test flights before departure.

2. The R.A.F., its servants or agents, will not be liable for loss or damage by fire, flood, tempest, explosion or other inevitable accident to aircraft or to the pilots, engineers, or other members of the crew thereof, or to any passengers, goods, or mails carried therein landing at or accommodated in any R.A.F. aerodrome.

3. (a) Attendance on civil aircraft by R.A.F. personnel other than the ordinary attendance included in the landing fees, will be charged for on the basis of labour and time. Such R.A.F. personnel will be available to assist civil aircraft only to a limited extent, and at certain aerodromes to be specified by the Secretary of State.

(b) Stores, such as fuel, oil, tyres, etc., and any standard spares that may be available, will be supplied to civil aircraft by the R.A.F. wherever possible, to meet emergency demands and when no other source of supply is available. Such supplies will be charged for at the current retail prices.

(c) Repairs will be carried out by the R.A.F. for civil aircraft on emergency when no other arrangements can be made. Repairs will be confined to such work as will enable the aircraft to proceed by air within a short period. No repair which will exceed a cost of £10, exclusive of the cost of stores and spares supplied, will be undertaken before an estimate has been made and submitted to the owner of the aircraft.

Repairs carried out by the R.A.F. will be

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carried out to the satisfaction of the responsible inspecting officer, but no responsibility as to the airworthiness of the aircraft shall rest on the R.A.F. aerodrome staff.

(d) Where R.A.F. workshops are available but no R.A.F. personnel can be spared, arrangements will be made to permit the use of the workshops by civilian firms on appropriate terms.

(e) Subject to the exigencies of the service, salvage of aircraft will be undertaken by the R.A.F. inside R.A.F. aerodromes, and as far as possible outside R.A.F. aerodromes. In both cases charges will be made according to the cost involved.

(f) Mechanical transport at R.A.F. aerodromes will be placed at the service of the civil firms on emergency, and when circumstances permit. The rates to be charged will be:—

	Per Mile
	s. d.
5-ton lorry	1 9
3-ton lorry	1 6
30-cwt. lorry	1 3
Motor car	1 0
Motor cycle	0 4

These charges to include the driver; no vehicle being hired without an R.A.F. driver.

(g) Arrangements will be made for the use of telephone, telegraph, and Post Office facilities at R.A.F. aerodromes by civilian firms using the aerodromes.

4. Arrangements will be made for the use of aerodromes for purposes of tuition, exhibitions, or sporting contests. The charge will be in the form of a lump sum for the period for which the aerodrome is required.

The firm leasing an aerodrome for any such meeting shall be entitled to charge such entrance

fees to spectators as they may desire. But they shall not charge more than the prescribed landing fees for any aircraft landing during the meeting. Such landing fee shall remain the property of the firm holding the meeting.

Seaplane Stations

5. The arrangements and charges at R.A.F. seaplane stations will be, as far as practicable, similar to the above arrangements and charges at R.A.F. aerodromes.

VII—Licensed Aerodromes

1. The proprietors of licensed aerodromes will be regularly supplied through the Air Ministry with the latest approved meteorological information, and will be responsible for exhibiting the same in a conspicuous place, and for supplying the same to pilots requiring it.

2. Proprietors of licensed aerodromes should, as far as possible, keep records of wind and weather.

3. Adequate first aid appliances must be kept at all licensed aerodromes.

WINSTON S. CHURCHILL,

Secretary of State for Air.

Owing to the fact that the subject is new and a great many of the provisions, when interpreted by rigid minded or biased officials, proved destructive, the enforcement of some of the provisions of this act was suspended, and modifications and general revisions are to be made from time to time. Lawmakers who desire to draft aerial laws should, therefore, inquire before adopting any of the provisions contained in this act. The authors will be glad to supply the latest information available on the subject.

Notes

PROPOSED FEDERAL AIR LAWS AND REGULATIONS FOR AIR TRAFFIC IN THE UNITED STATES

Air traffic is essentially international and interstate in character, therefore the air laws and regulations for air traffic in the United States should be made by the Federal Government.

State registration of aircraft can hardly be avoided.

To enforce these laws and regulations requires a staff of experts similar to the staff of the Steamboat Inspection Service, of the Department of Commerce.

The work of registering aircraft and licensing aviators being analogous to the work of registering ships and licensing sea navigators, which is done by the Department of Commerce, it has been proposed that the Department of Commerce be put in charge of this work.

Temporary legislation to this effect, proposed in February, 1919, and was approved by President Wilson, Secretary of War Newton D. Baker, Secretary of the Navy Josephus Daniels, Secretary of Commerce William C. Redfield, Chairman Charles D. Walcott of the National Advisory Committee on Aeronautics, the Aero Club of America, the Aerial League of America, the Aerial Touring Association, and the Pan-American Aeronautic Congress.

The memorandum pointing out the need of aerial laws and the proposed legislation which were approved by the above mentioned authorities last February, read as follows:

"Memorandum"

"An emergency has arisen in relation to the establishment of rules and regulations to govern aerial navigation within the United States and its dependencies.

"1. At the present time there is no authority for the establishment of rules and regulations to govern civil aerial navigation in the United States and its dependencies except local laws passed prior to 1914 in the States of Massachusetts and Connecticut.

"2. The War Department alone now has for sale several thousand aircraft of various types which, if put upon the market, will be purchased largely by amateurs, and in the absence of Government rules and regulations it is highly probable that many accidents will occur and much litigation ensue.

"3. There is also a probability of complications, especially in matters of smuggling, arising by unlicensed, irresponsible aircraft crossing the borders between the United States and both Canada and Mexico.

"Proposed Law Governing Aerial Navigation in the United States and Its Dependencies and Between the United States and Foreign Countries"

"That no person, company or corporation within the jurisdiction of the United States and its dependencies, other than duly accredited

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officers and enlisted men of the Army, Navy and Marine Corps, shall use or operate any aircraft in aerial navigation from one State or Territory of the United States or the District of Columbia, to any other State or Territory of the United States or the District of Columbia, or between the United States or its dependencies and any foreign country or any international waters, except under and in accordance with a license, revocable for cause, granted by the Secretary of Commerce upon application therefor; and the Secretary of Commerce is hereby authorized to grant such licenses and to make and publish all needful rules and regulations for the licensing and navigation of such aircraft; any violation of such rules or regulations to be punished by a fine not to exceed \$500.00; and the

Secretary of Commerce shall submit, by December 10, 1919, a report to Congress, giving in detail the action taken by him hereunder, together with his recommendations for further and more detailed legislation with respect to the navigation of aircraft and the licensing and regulation thereof. For the enforcement of this act and the rules and regulations made in pursuance thereof, including personal services in the District of Columbia and in the field, the sum of \$25,000.00 is hereby appropriated."

Subsequently it was decided to wait to enact legislation until such time as the reports of the Aeronautic Commission of the Peace Conference could be studied, so that the national aerial laws will harmonize with the international aerial laws.

Notes

AERIAL SMUGGLING

The aeroplane is admitted to be destined to become an ideal vehicle for smugglers. There are aeroplanes today that can fly between the Maine coast and the Irish coast, and a contraband business could be conducted between the two coasts with less danger and risk of detection than by the use of boats.

That aeroplanes began to be used for such purposes soon after the signing of the Armistice seems evident from published reports, some of which are quoted herewith:

Berlin, Aug. 5, 1919. (Associated Press.)—A special dispatch to the *Lokal Anzeiger* from Rybnik, Upper Silesia, says a large German aeroplane belonging to a German airship works fell yesterday morning near Ratibor while crossing the Polish frontier, all of its seven occupants, including the pilot, Bindereif, being killed.

An official announcement says the airship was shot down by Polish border troops.

Among the passengers was former Finance Minister Witousky of the West Ukraine Republic, who attended the Peace Conference and later visited Berlin for a few days, and had expressed his intention of returning to Breslau by aeroplane.

The aeroplane carried 3,000,000 rubles in Ukrainian money and a sack of Russian money. Important documents belonging to the Ukrainian Government were also found.

London, Aug. 12, 1919.—The Saxon Crown jewels, including a pearl necklace, valued at £39,000, were contained in the two packages dropped last week near Malmoe, Sweden, from an aeroplane and taken charge of by the police of Malmoe, says *The Mail's* Copenhagen correspondent.

In the packages were also gold heirlooms and securi-

ties worth hundreds of thousands of pounds, making it the biggest customs haul on record.

"Two Germans who picked up the packages and claimed the valuables as their own were arrested and taken to Stockholm," says the correspondent. "One is a Countess and the other was formerly a court official at Dresden. The German Minister at Stockholm claims that the jewels are not liable to confiscation, as they are 'royal property.' "

London, Aug. 20, 1919.—A Copenhagen dispatch to the Exchange Telegraph says it is believed that \$4,000,000, an attempt to smuggle which from Berlin into Switzerland was frustrated by policemen in aeroplanes, belong to the former Crown Princess.

A person of high social prominence has been arrested in connection with the attempt to take the money from the country. Two women police agents recently learned, the despatch continues, that this person was drawing on the Berlin banks and endeavoring to get as much money in gold as possible.

The Berlin Chief of Police has arrived by aeroplane at Weimar to report the case to President Ebert.

British Parliament and the Aerially Smuggled Dogs

A man's love for his dog is proverbial; but it is, nevertheless, surprising that the first cases of smuggling should deal with dogs.

The subject has come up a number of times for discussion in the British Parliament. On May 19, 1919, Colonel Weston, a member of Parliament, asked Major General Seely, the Under Secretary of State to the Air Ministry, whether, in view of the spread of rabies in England, the belief that dogs were being imported

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from dangerous countries by airmen, and the fact that outbreaks seemed to have origin close to well-known aerodromes, if he would institute a Court of Inquiry to investigate the matter at Home and Continental aerodromes between which there was communication; would he furnish as far as possible to the proper authorities at home the number of dogs so imported during the last twelve months, the names of the airmen who brought them over, and the names and addresses of the receivers of such dogs; and would he state what steps be taken by the military authorities at the ports of embarkation abroad and disembarkation at home to ensure that dogs be not smuggled home, apart from the mere notification to troops and women who had been in service that it was forbidden.

Major General Seely answered: "The Air Ministry has no information which bears out the suggestion that dogs have been imported by aeroplanes. The matter is one which has received, and will continue to receive, close attention. Inquiries as to the procedure at ports of embarkation should be addressed to the War Office."

A month later the subject had been investigated and it had been found that sixty-four dogs had been illegally imported by aeroplane and Colonel Weston asked the Under-Secretary of State to the Air Ministry, in view of the official report that sixty-four dogs had been illegally imported, what precautions were taken to guard against dogs kept in an aerodrome being infected with rabies in the event of a dog being imported?

Major General Seely replied, "The irregular importation of dogs is strictly forbidden, and

under existing Orders should be impossible. I am sending my honorable and gallant friend a copy of the Order."

Despite the fact that England is a thickly populated country, a rather small island with hardly any place where aviators can land undetected, aerial contraband of various forms is being conducted and the British authorities find it impossible to prevent it.

This is not surprising considering the fact that even when protected by thousands of guns and hundreds of planes, it was impossible to prevent enemy planes from bombing England.

How much easier aerial contraband will be in the United States, where there are thousands of open fields away from populated places where aeroplanes can land, and hundreds of lakes where seaplanes can be landed and where contraband can be unloaded.

Being capable of carrying approximately five tons of useful load, the present day large aeroplane, for instance, could conduct a very profitable business in carrying opium, intoxicants, and other contraband from Cuba to any place inland in the United States, or from Lower California or Mexico to any place inland in the United States, or from Canada.

When Aeroplanes Are Used to Carry Liquor

An aeroplane arrives at the Atlantic City Airport or at Belmont Park. The aviator greets the people around him and remarks that he had a good trip from Boston and proceeds to unload his cargo on an automobile, which is soon on its way to deliver the cargo to its destination.

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As a matter of fact he came from Cuba or Montreal and his cargo is alcoholic, therefore contraband and against the Prohibition Act.

Before long it becomes known that aircraft are used to transport alcoholic beverages from Cuba, Canada, or other places, to the United States, and some action must be taken to prevent it.

This means patrolling the air as well as controlling aeroplanes and aviators by Federal restriction and licensing, inspecting the cargo and giving them clearance papers as is the case with ships.

This is easier said than done.

Supposing that a ship could dive or rise and disappear from sight under water or in a screen of clouds—policing the sea would certainly be most difficult.

The fact that during the war all the German aerial and anti-aircraft forces could not prevent the allied aviators from bombing German military and naval bases; and the very powerful British and French aerial and anti-aircraft forces could not prevent the enemy aerial operations, shows the difficulty of preventing aerial smuggling.

During the war no chance was taken. Listening stations were established at intervals of a few miles and thousands of anti-aircraft guns were ready to pour their deadly fire at a given spot in the sky and form an aerial barrage intended to prevent the raiding aeroplane from passing.

The anti-aircraft guns were assisted by hundreds of fighting aeroplanes which patrolled the sky day and night, ever ready to attack and destroy a raiding aeroplane.

No prisoners were taken in the air and the percentage of those who survived an aerial battle was small.

Aircraft Can Drop Contraband by Means of Parachutes

Aircraft do not have to land to unload their smuggled goods. They can drop their contraband by means of parachutes, even bottled goods.

At the Atlantic City Airport recently a crate of eggs was dropped from an aeroplane at an altitude of 2,000 feet. The parachute deposited the frail load on the ground lightly, without breaking a single egg!

Aircraft Can Relay Contraband to and from Ships

Aeroplanes have been the auxiliaries of ships throughout the war. Seaplanes have been flying to and from ships and land aeroplanes were installed on narrow platforms on gun turrets of battleships and actually flew off these platforms, which were less than twenty-five feet wide and fifty feet long!

What is there to prevent a seaplane from flying to a ship fifty or one hundred miles out to sea, drop a package of contraband goods on board, or land by the ship and hand the package to somebody?

Another seaplane can meet the ship fifty or one hundred miles from its destination, pick up the package and bring it in the country without the formality of paying duty.

There are scores of seaplanes flying daily from twenty to fifty miles out to sea without even exciting comments.

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SALVAGE OF WRECKED AIRCRAFT AWARDS?

It would appear logical that the principles of Maritime Law as regards salvage of ships should be applied in the case of salvage of wrecked aircraft.

The British authorities proposed to cover this phase of aerial jurisprudence with the following clause in the draft of the Aerial Navigation Bill of 1911, which was considered too visionary at the time and was not adopted by the Home Office or the Government:

"13—(1) If any person finds, whether on land or at sea, an aircraft which has been wrecked or lost, he shall as soon as may be possible communicate with the police or other proper authority, and the police or authority shall communicate the information to the owner of the aircraft if he can be ascertained.

(2) Where any such aircraft is salved, then—

(a) if the owner of the aircraft does not abandon his right to the aircraft he shall pay to any persons whose services have contributed to the salvage of the aircraft, including any person or authority who has given or communicated such information as aforesaid, any expenses incurred by them for the purpose and five per cent. of the value of aircraft as salved, after deducting from that amount the amount of the expenses of salvage payable by the owner, to be distributed amongst those persons in such manner as, in default of agreement, the court having cognizance of the case may think just; and

(b) if the owner abandons his right to the aircraft, it shall be sold or otherwise dealt with for the benefit of the salvors.

(3) The Board of Trade may make regulations for the purpose of carrying this section into effect, and in particular may prescribe what authority shall be deemed the proper authority, the manner in which communications are to be made, the manner in which an owner may abandon his right to an aircraft, and the manner in which aircraft may be sold or otherwise dealt with for the benefit of the salvors."

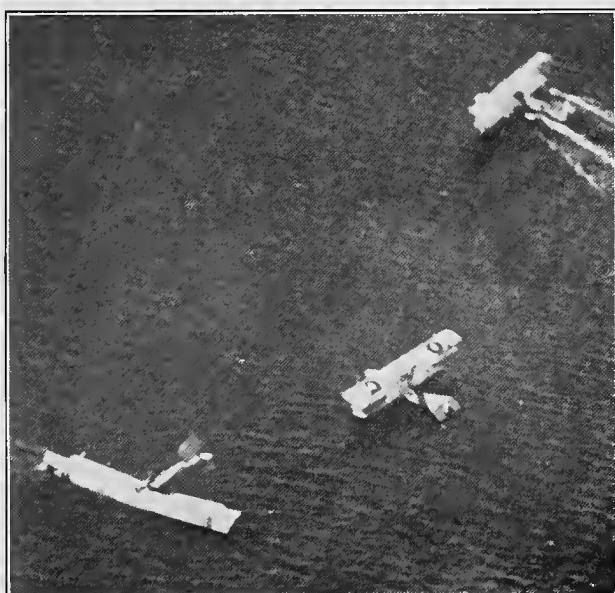
Since then aircraft have been salvaged. In 1913 a British airship broke down far from its station and another airship went to its rescue and towed it through the air back to its station. There are scores of cases of seaplanes flying to the rescue of breakdown seaplanes, towing the latter and crew to air stations.

Having in mind the demonstration given at the Second Pan-American Aeronautic Convention, Atlantic City, May, 1919, of the feasibility of changing from one aeroplane to the other in midair, we can readily foresee the possibility of an aeroplane going to the rescue of another plane which has caught fire in midair, and while flying over it at even speed, put the fire out with its fire extinguishers. In such cases at sea the Courts of Admiralty would award the salvors part of the value of the saved ship. Why not apply this principle in the air?

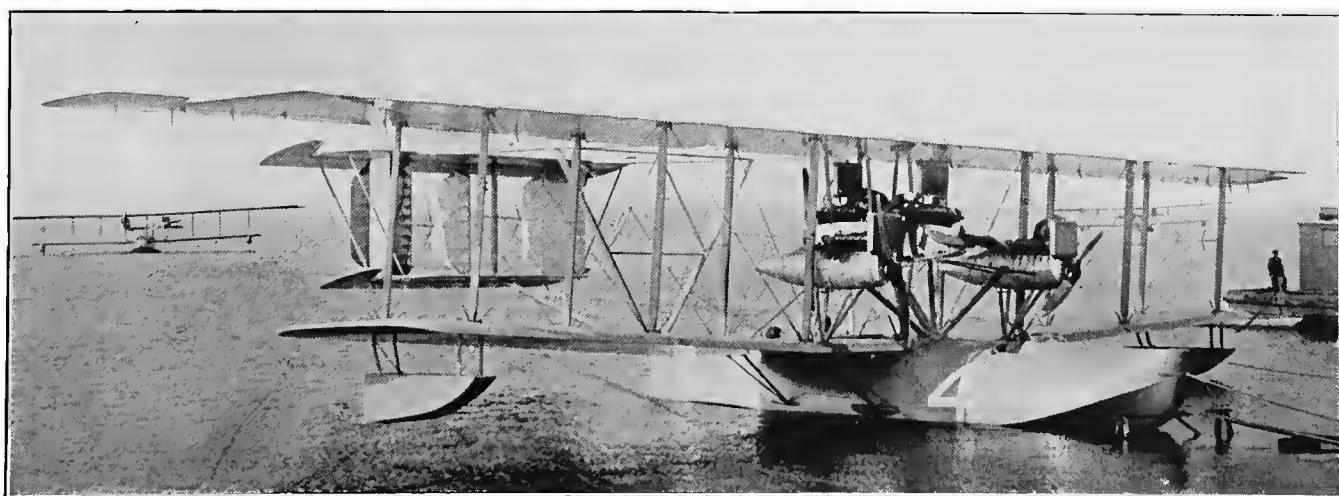
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Is this aviator entitled to salvage award? Seaplanes are to play an important part in coast guard and life saving work. This photo shows a naval flying boat which flew to the assistance of the stranded troopship *Northern Pacific* which went aground in a fog on New Year's Day off Fire Island, on the Long Island Coast.



Are these entitled to salvage awards? Photograph taken from the air showing two seaplanes from the Miami Naval Air Station going to the rescue of a student aviator whose seaplane turned over and who was in danger of sinking.



When seaplanes are on the water they are subject to the regulations which govern ships and motor boats. When flying they are subject to the aerial "rules of the road."



Until special aircraft are evolved to rise and descend vertically, or suitable provisions are made for large platforms on which to land, aeroplanes and dirigibles can only start from and land on buildings as spectacular stunts, dangerous to the community as well as to the pilots and passengers of the aircraft. This photograph shows the aeroplane of Jules Vedrine after it alighted on the roof of a Paris store. The roof terrace, which was only 47 feet wide, had been lined with sand bags to facilitate the landing. The span of the aeroplane was 39 feet, almost as large as the roof itself.



A spectacular flight which would cause the aviator to lose his license and his insurance policy unless authorized by the authorities. Aviators are apt to want to show their skill by flying through the narrowest openings, but in doing so they endanger life and property, therefore flying under bridges is forbidden by most cities. This photograph shows Captain Alcock flying through the Tower Bridge in London.

STATE (U. S.) AERIAL LAWS

As already pointed out, air traffic being interstate traffic, the registration of aircraft and aviators comes under the Federal Government, but states may deem it necessary to enact laws to protect state rights and property or for other purposes. In such case the lawmakers should study the Federal Aerial Laws and draft their legislation to harmonize with Federal laws.

New York Pioneer in State Registration of Aircraft

In October, 1919, Governor Alfred Smith, of New York, appointed a State Aeronautic Commission consisting of Colonel Jefferson DeMont Thompson, president of the Aero Club of America, chairman, and Messrs. Alan R. Hawley, Robert Graves, Frederick H. Allen, Henry B. Herts, Frank F. Voss, and Chauncey D. Hakes.

The purpose of the commission is to draft aerial laws and regulations and direct the aeronautic activities of the state of New York.

A number of states have in the past considered aerial legislation. In some cases the lawmakers' ignorance of aeronautics made them the laughing stock of the country, as in the case where legislation was proposed to prohibit aviators from ascending to a height of over 1,000 feet and making aviators put up a bond of \$10,000 to bind them to obey the law.

Most of the state laws proposed overlooked the fact that to enforce aerial laws requires a staff of experts as well as an aerial police.

In the State of Massachusetts, for instance, in 1913, was adopted an act to regulate the use of aircraft. After the act went into effect an aviator applied for a license and was told that as no provision had been made for a board of experts to conduct the necessary examination of the pilot and inspection of the aircraft, he could not be given a license. So he flew without a license. Subsequently he fell and was hurt. He was arrested for flying without a license. When it was explained that he had applied for the license but the State was not prepared to give it to him he was discharged.

The Massachusetts act to regulate the use of aircraft reads as follows:

Massachusetts Act to Regulate the Use of Aircraft

Section 1. It shall be unlawful for any aviator or other person to operate an aeroplane or aircraft of any kind unless licensed so to do by the Massachusetts Highway Commission, except with a licensed pilot and then not for a distance exceeding five hundred miles. All licenses so granted shall expire on the last day of the year in which they are issued, and may be revoked at any time by the said commission. The license fee shall be five dollars; but no fee shall be charged for the issue of a new license to a person whose license is about to expire. No license shall be granted until the applicant has passed a satisfactory examination by the

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commission consisting of written replies to questions put to him by the commission, and of a flight to be made under the direction of an expert employed for the purpose by the commission. The questions put to the applicant shall include a test of his familiarity with such laws of the commonwealth as may be applicable to the operation of aircraft. No person shall receive a license as aforesaid until it is proved to the satisfaction of the commission that he has flown not less than one hundred miles in some standard type of machine.

Section 2. No aeroplane shall be used until it has been inspected by an inspector employed for the purpose by the said commission, and has been approved, registered, and had a register number assigned to it by the commission. The foregoing provision of this section shall not apply to aeroplanes used solely for the purpose of experimentation when used on or over grounds specially devoted to aviation, or over an open body of water of sufficient size. The fee for registering each aeroplane shall be ten dollars. The registration number, in numerals not less than two feet high, shall be carried at all times when an aeroplane is away from its home station, and shall be so secured as to be visible from below. A registration number shall not be shifted from one aeroplane to another except in the case of aeroplanes operated by manufacturers or dealers, in which case a special registration number shall cover any or all aeroplanes which may for the time being be controlled and operated by any such manufacturer or dealer.

Section 3. Aviators while flying over any part of the commonwealth shall conform strictly to the following rules of the air:

(a) **Meeting head on:** When two aeroplanes are in danger of meeting head on, each aviator shall change his course to the right. (Note—This method of passing being in accordance with the rules of the road on land and with the United States steamboat regulations at sea.)

(b) **Meeting obliquely—**When two aeroplanes threaten to meet at an angle, that aeroplane which has the other on its left shall have the right of way and shall continue its course with as little deviation as possible. The aviator who finds another aeroplane approaching him from the right shall change his course in order to avoid a collision. In changing his course the aviator may pass above, below, or on either side of the aeroplane having the right of way, but in any case shall not pass within one hundred feet of the aeroplane having the right of way. (Note—By giving the right of way to the aeroplane which has the other on its left hand this rule of the air is made to correspond with marine practice.)

(c) **Overtaking—**One aeroplane shall be considered as overtaking another when it approaches the other from a position which is in any degree to the rear of the leading aeroplane, whether it approaches from directly astern or obliquely from the right or left, downward or upward. It shall be the duty of an aviator overtaking another aeroplane to act on the assumption that the aviator ahead of him is ignorant of the approach of the other aeroplane and may change the course of his aeroplane without warning. The overtaking aviator shall therefore be held solely responsible for avoiding a collision, which he may do by directing his course to the right or to the left, upward or downward.

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He shall so direct his course that the overtaking aeroplane shall not pass within one hundred and fifty feet of the overtaken aeroplane.

Section 4. No air machine shall fly over a city in the commonwealth at an altitude of less than three thousand feet, and no air machine shall fly over any town or village containing less than one thousand inhabitants except at an altitude of at least five hundred feet, and no air machine shall fly over any town or village in the commonwealth containing more than five thousand inhabitants excepting at an altitude of one thousand feet.

Section 5. No aviator shall fly over any massed assembly of one hundred or more people in the open, whether such people be grouped in a grandstand or massed in an open field; and no aviator shall intentionally throw or drop any missile or other article from an aeroplane in flight except over grounds devoted to flying or over open water unless he has previously obtained the special permission of the commission.

Section 6. When flying over buildings, persons or animals, an aviator shall fly at such altitude as will best conduce to the safety of those below him as well as to the safety of himself and his passengers, if he be carrying passengers. He shall be held liable for injuries resulting from his flying unless he can demonstrate that he had taken every reasonable precaution to prevent such injury.

Section 7. Except in cases of emergency an aviator shall not land in highways or public

parks or other public grounds without permission from the authorities in charge thereof. In case an aviator should land in a highway, public park, or other public ground without permission, the Massachusetts Highway Commission may require him to prove that the landing was an emergency landing.

Section 8. The foregoing sections of this act shall not apply to military aviators while in the service of the commonwealth or of the United States.

Section 9. The said commission may permit any aviator or aeroplane which has been duly licensed or registered in another state to operate within this commonwealth for a period not exceeding ten consecutive days without requiring such aviator to obtain a Massachusetts license or to register his aeroplane.

Section 10. Any applicant for an aviator's license or for the registration of an aeroplane may appeal to the Massachusetts Highway Commission from any decision of an employee of the said commission. In such case the applicant shall be entitled to a hearing before the commission.

Section 11. Whoever violates any provision of this act shall be punished by a fine of not less than ten nor more than five hundred dollars, or by imprisonment for not less than one month nor more than six months, or by both such fine and imprisonment.

Approved May 16, 1913.

Notes

REGULATIONS FOR FLYING OVER CITIES

A number of accidents, some due to recklessness on the part of the pilot, and some due to other causes, have shown the need of regulations for over city flying.

Owing to the fast progress of aeronautics and the desirability of employing aircraft for transportation, the making of regulations to govern flying over cities is somewhat difficult, especially owing to the fact that the same regulations can hardly be applied to a number of cities.

In a general way the purposes of the regulations would be (1) to prevent aircraft from flying so low as to endanger life and property below in case the motor should stop; (2) to make aviators fly high enough so the aircraft will have a gliding angle sufficient to enable it to reach the nearest aerodrome in case the motor stops; (3) nothing should be dropped from an aircraft while flying over cities which may endanger life or damage property or annoy people below.

It is evident that unless cities are equipped with airports or flying fields it would be impossible for aircraft, under these regulations, to fly over a city.

As a general rule the tendency is to welcome aviators who land in parks, but occasionally an aviator is subject to arrest, as was the aviator who landed in Van Cortlandt Park, New York, and was arrested charged with "unlawfully disturbing the grass in a grass plot in Van Cort-

landt Park by landing there with an aeroplane without a permit from the proper authorities."

Regulations for Flying Over Paris and London

Paris, the French metropolis, was first to adopt aerial regulations. M. Lapine, the famous Prefect of Police of Paris in 1912, adopted the following regulations for flying over the city:

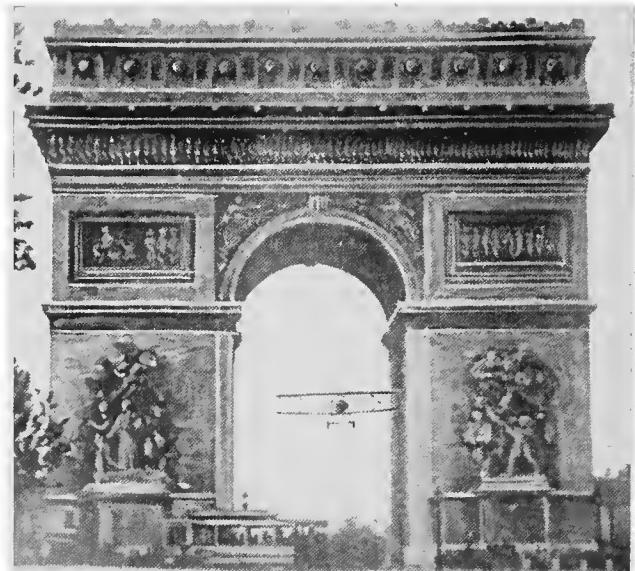
1. The regulations will apply to the three following classes of machines for aerial locomotion: Aeroplanes, dirigible balloons and free balloons; all three classes will be included under the general denomination of aeronefs.
2. Landing at any point within the city of Paris or the communes of the Seine Department is forbidden.
3. Apparatus circulating above Paris and the chief towns of the department must keep at such a height that a landing can be made at a point free from collections of buildings.
4. Pilots of dirigible or free balloons may not throw overboard any form of ballast but fine sand.
5. No aeronefs, if compelled to land unexpectedly, may make a new start from the place of landing. All apparatus must be taken to pieces and removed to the nearest fixed starting grounds.

London, New York and other cities left the making and enforcing of regulations for flying over cities to their Aero Clubs, whose power to suspend an aviator and exclude him thereby from participating in aviation meets, or making records anywhere in the world, insures a penalty

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A passenger descending in a parachute after jumping from an aeroplane.



A spectacular flight which would lead to the aviator losing his insurance policy. A French aviator "threading" the Arc de Triomphe. The width of the opening in the Arc being only 43 feet and the span of the wings 22 feet, the stunt was a dangerous one, and the Paris police issued orders forbidding any similar attempt to fly under the Arc or under bridges.



A spectacular flight under a bridge which would cause the pilot to lose his insurance policy.

Factors which Increase or Decrease Aerial Insurance Rates

A parachute is considered a life preserver in aerial navigation and passengers who travel in aircraft equipped with parachutes are considered entitled to lower rates than passengers travelling in aircraft not equipped with aerial life preservers. In a special report, the Committee on Aerial Insurance of the Aero Club of America and the Aerial League of America have recommended lower rates for aircraft having the following features:

- (1) Aircraft equipped with two or more motors which can fly without serious loss of height with one motor when equipped with two; with two motors when equipped with three or four; with three motors when equipped with five. This reserve in power plants will enable the aircraft to continue on until a safe landing place is found, in the event of half of the power plant breaking down;
- (2) People travelling in aircraft equipped with parachutes or other forms of aerial life preservers should be entitled to lower rates;
- (3) Aeroplanes having a high gliding angle as well as high factor of safety;
- (4) Aircraft protected from fire through the use of non-inflammable "dope" or other preparation applied to every burnable part of the aircraft.
- (5) Aircraft equipped with protected gasoline tanks.
- (6) Aircraft equipped with stabilizers or "automatic pilots."
- (7) Aircraft duly equipped with all the necessary instruments for aerial navigation.



The international aerial regulations require that aircraft conducting international traffic land only at official aerodromes and that they shall carry a sealed barograph registering altitudes maintained throughout the flight which would indicate any landing. This photograph shows an aviator on the top of a plane about to change to the plane above, which demonstrates the possibilities of avoiding the customs regulations by transferring dutiable goods to another plane while in flight.



This remarkable photograph of six kite balloons, from the Arcadia, California, Army Balloon School, over the Californian mountains, suggests the employment of kite balloons to watch against aerial smuggling in localities where aircraft could otherwise land unobserved, with smuggled goods.

much more severe than being fined by a magistrate. Flying over London is now governed by the British Aerial Navigation Act of 1919, printed elsewhere in this book.

State and municipal air laws and regulations should harmonize with the Federal laws, therefore it is hoped that states and cities will wait to frame laws and regulations until the Federal laws have been framed.

Aerial tragedies and accidents and annoyances can be averted in the meantime by the co-operation of the Aero Club of America, the Aerial League of America and the Aero Clubs and organizations affiliated with these organizations, who have as much influence on aviators as is required to prevent reckless flying.

How Atlantic City Curbed Reckless Flying

The Atlantic City case illustrates this point. The Second Pan-American Aeronautic Convention and the establishing of the Airport made Atlantic City the center of civilian flying in the spring of 1919. Making passenger flights became popular and, naturally, the aviators and their passengers wanted to fly over the famous Boardwalk. At first, this practice was interesting to the City. Aeroplanes were a novelty and to be the aeronautic center of civilian activities was a distinction.

But, one warm day, a half dozen planes flew over the city from early morning until late at night, carrying passengers. The noise disturbed people taking naps in the afternoon and flying over the Boardwalk in the night had a weird, frightening effect. Complaints were made to the City and for a month thereafter the number of complaints increased.

The City referred the complaints to the Atlantic City Aero Club and Mr. Albert T. Bell, the president of the Atlantic City Aero Club, sent the following notice to all the aviators:

"THE ATLANTIC CITY AERO CLUB requests that Aviators flying about Atlantic City comply with the following rules. Careful observance will stop the serious complaints which are reaching the Club as to:

- (a) Objectionable noise from motors,
- (b) Risk to the public from low flying,
- (c) Danger to passengers from insufficient height.

"In effect Tuesday, June 24, 1919, at noon:

"RULE No. 1: District No. 1 is defined for the present as territory, both land and water, which is bounded by a line drawn from the Inlet Wharf to a point 100 feet oceanward of the beginning of the Boardwalk to a point 100 feet oceanward of the Old Windmill at Baltic Avenue and the Boardwalk, to the Black and White Channel buoy, to the inner black can buoy, to the outer black can buoy, to the outer end of the Steel Pier, to the outer end of the Million Dollar Pier to a point in the ocean two thousand feet from the Boardwalk opposite the end of Albany Avenue to the intersection of Albany Avenue and the inside Thoroughfare and from said intersection following the line of the Inland Waterway to the Inlet Wharf.

"RULE No. 2: Aircraft flying over District No. 1 shall maintain an altitude of two thousand, five hundred feet or higher."

Any city having trouble with aviators flying over the city or flying too low for public safety can obtain the same results by this method, without plunging in the difficult task of drafting regulations.

How Will You Find Out Who Dropped the Monkeywrench on Your Roof?

Cases of dropping of objects from aircraft are on record. One day Mr. Alan R. Hawley, president of the Aero Club of America, and the

writer were watching a flight at a Long Island aerodrome when an object passed us and struck the ground by us. It was the door of the engine cowl, a piece of sheet metal about one foot square. The pin that held it had worked its way loose, or the mechanics had forgotten to fasten it with the pin. The air pressure had blown it away from the plane.

Cases are on record of monkeywrenches being left on the wings or other parts of the plane by mechanics while getting the plane in readiness for flight. The planes went up and soon the monkeywrench came hurtling through space, fortunately not hitting anyone.

There have been many cases where, during flights in aeroplanes equipped with two or three motors, one of the motors stopped and it became necessary for the mechanic to go out to repair it. This happened once while the writer was flying in a three-motored Caproni biplane, over Garden City, and happened to the large Handley-Page biplane while it was flying from Newfoundland to the Atlantic City Airport. After the flight across the Atlantic of Captain John Alcock and Lieutenant Arthur W. Brown, I thought it would be better for this plane to fly to the United States. So I sent a telegram to Admiral Mark Kerr, who was in charge of the Handley-Page, inviting him to fly to the Atlantic City Airport. They started and flew part of the way, then the gasoline pipe of one of the motors broke and the mechanic climbed out on the plane to repair it. But it was too dark to see, therefore, it was decided to land.

Anyone can readily see how possible it would have been to lose a monkeywrench in such a case.

When hundreds of aircraft navigate the air at speeds of up to 300 miles an hour, going in every direction of the compass, how will you find out who dropped the monkeywrench on your roof?

Compelling aircraft to have all their tools and parts stamped with their license number will be one solution.

Shall Aircraft in Distress Throw Cargo Overboard?

You may forbid carrying loose monkeywrenches and other tools and may punish those who let things drop from aircraft—but can you forbid aircraft in distress from throwing cargo overboard?

The British Aerial Laws forbid throwing overboard anything excepting sand or water ballast—and when the officials were asked whether it would not be better to let the pilot of a crippled dirigible drop a ton of equipment than to let the huge dirigible, weighing about fifty tons, fall, they said they will deal with such a case after it has happened; which is the way most of the air laws will be made and revised to fit the case.

When Messrs. Forbes and Post Dropped 3000 Feet and Went Through the Roof of a House

This reminds us of the time, in 1909, when the balloon of Messrs. A. Holland Forbes and Augustus Post exploded when they were 3,000 feet over Berlin and they dropped down and went through the roof of a house and landed in a lady's boudoir.

They represented the Aero Club of America in the International Balloon Races and had started from the balloon park near Berlin. But, on starting, the balloon basket caught on a fence and a number of bags of sand used as ballast dropped from the basket. Relieved of the weight of these bags of ballast, the balloon shot up in the air rapidly. The "appendix," or tube from which the gas escapes when the pressure is excessive, due to the expansion of the gas when heated by the sun, was tied and the gas could not escape. There was an explosion and the balloon began to drop like a stone.

Fortunately, the air filled part of the balloon bag and it acted like a parachute and checked the drop considerably.

As they were about to strike the roof of the house they both made a jump for the wooden ring overhead, which held the ropes connecting the basket to the gas bag. Jumping for the "Concentrating Ring" is a trick in ballooning. It enables the people in the basket to escape the shock as the balloon basket strikes the ground. Messrs. Forbes and Post were saved from the great shock of the basket striking the roof of the house, which made a hole in the roof and they were dragged down by the basket. They found themselves in a lady's boudoir, but the lady was not at home.

Two days later she wrote to them inviting them to call while she was at home!

Difficulty of Enforcing Aerial Laws

Reading over the International Aerial Laws and the British Air Regulations, one realizes the difficulties ahead for the authorities in trying to enforce the laws.

Many months after the Air Navigation Act had become a law the British Air Ministry was still issuing warnings to aviators about the infringement of the most elementary provisions of the Act.

Following is one of the warnings:

It is notified that though the Air Navigation Regulations have been in force since May 1, and it is felt that pilots and others have now had ample opportunity of acquainting themselves with the regulations, numerous instances of their infringement are still being reported.

The regulations were made with a view to securing the public safety, and, in future, proceedings will be taken when they are contravened.

The public are requested to co-operate with the Air Ministry in this matter by forwarding to the Secretary, (C.G.C.A.) Air Ministry, London, particulars of alleged offences, including, if possible, the registration number or mark of the machine in question.

The most common instances of infringement are:—

1. Dropping leaflets and other advertising matter. (For the purpose of the Victory Loan Campaign the Secretary of State for Air waived the provision in the Regulations against the dropping of leaflets from aircraft; but the exemption has now been withdrawn.)
2. Taking up and landing passengers as a regular proceeding at places which have not been licensed as aerodromes.
3. Low flying, (a) over towns, (b) to the danger of the public elsewhere.
4. Neglecting to obliterate military markings when a machine has ceased to be a military machine.
5. Obscuring registration marks by means of advertisements or otherwise.

Difficulty of Seeing Aeroplane Numbers if Planes Fly High Enough to Comply with the Law

The international aerial navigation regulations provide that every aircraft shall be marked

with letters and numbers to designate their nationality and their registration.

The British regulations for aerial navigation provide that: "aircraft shall bear the prescribed registration and nationality marks, affixed or painted on the aircraft in the prescribed manner."

In other words, aircraft will have to carry the equivalent of automobile number plates. Easily said and easily done—but to read the plate number is another matter. You can read it from the ground if the day is clear and the aviator is not higher than 2,000 feet and you have a good eyesight and the sun is not shining straight in your eyes. Incidentally, the aviators are not supposed to fly as low as 2,000 feet over cities. They must fly high enough to be able to glide down to a prescribed landing place or aviation field in case the motor stops.

The average gliding angle of an aeroplane is six to one. If the aviator is up five thousand feet he has a radius of 30,000 feet, or about seven miles in which to find a landing place. Twin motored planes are usually heavier, therefore, their gliding angle is less. But in case one motor stops, the machine is kept going by the other motor.

The heavy, high horsepower, single-motored planes which have a gliding angle of only two or three to one should not be permitted to fly over cities, unless the cities have a number of landing fields to which the aeroplane can glide.

In view of the fact that the use of aeroplanes is spreading and that aerial navigation over long distances is coming, cities will find it necessary to establish airports within the city limits,

which will facilitate flying over cities. Until then, flying over cities will be restricted by the lack of landing places.

You can also read the number on the plate if you fly up to the plane, parallel or over it, and neither you nor the refractory aviator is looping, spinning or flying upside down.

If he is up a few thousand feet higher than the aerial policeman and flies a plane as fast as the air cop's plane, then the latter begins to be hopeless. He will not be able to get close enough to see the number on the plate.

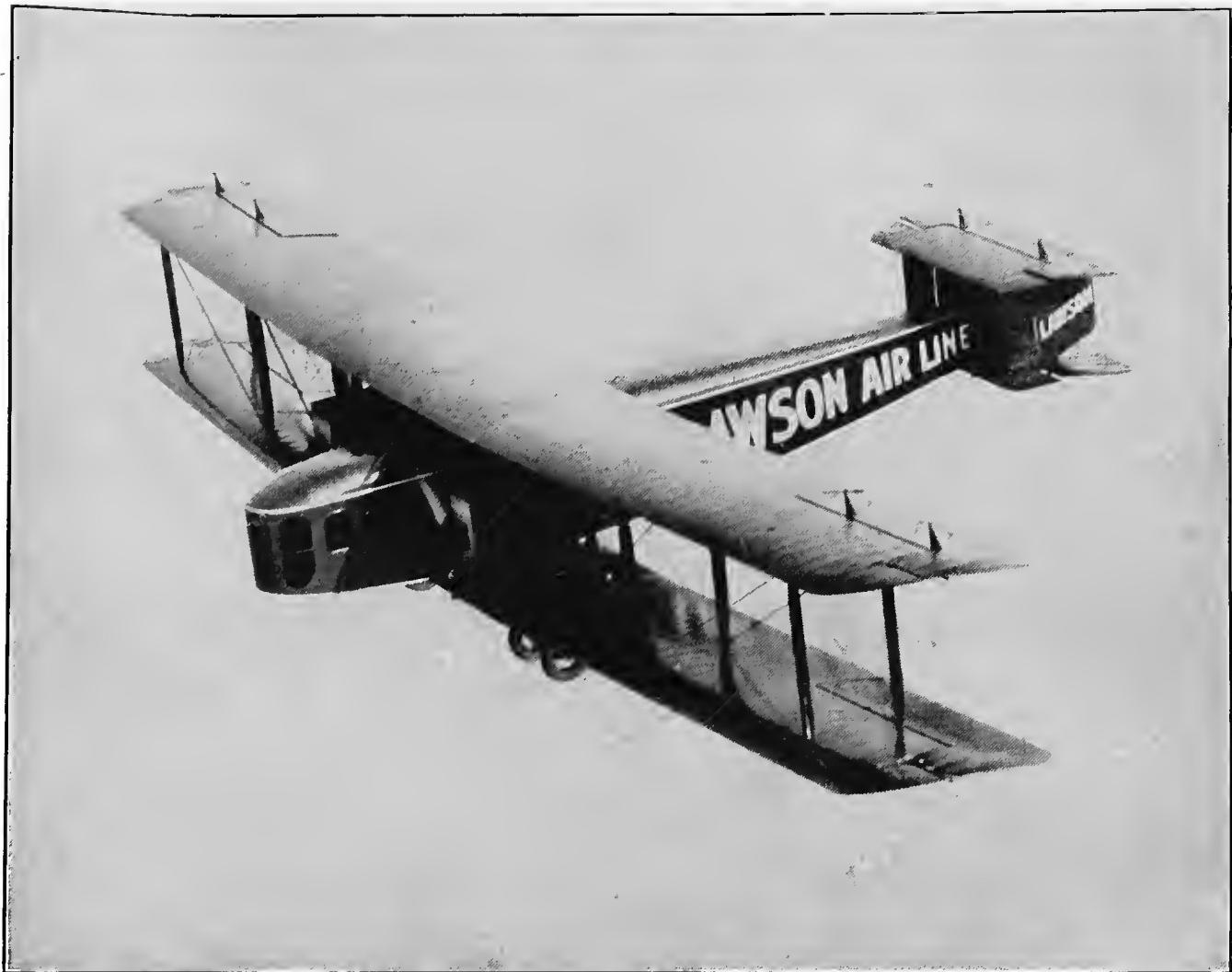
Unless he is equipped with the most powerful plane available and equipped with "super-chargers" to enable him to climb up to whatever heights the lawbreaker may try to escape in, the air cop will be the laughing stock of the "sport" who flies a powerful racing plane, capable of going at 200 miles an hour, climbing three thousand feet a minute and going up to the fifty thousand foot level.

Even if he has the equipment capable of coping with the lawbreaker, the air cop will be the subject of a great many jokes and will have to be ready to climb from the balmy air of the five thousand foot level to the frigid and rarified air of the thirty thousand foot level and from breathing the ozone of the lower level to breathing through the oxygen mask at the higher level.

The Airman Will Have to Tell His Number!

Even with the best of plane, the air cop will have a hard time finding the plate number of a given aircraft, unless a law is passed compelling every aircraft to carry a radio telephone and compelling airmen—and airwomen—to tell

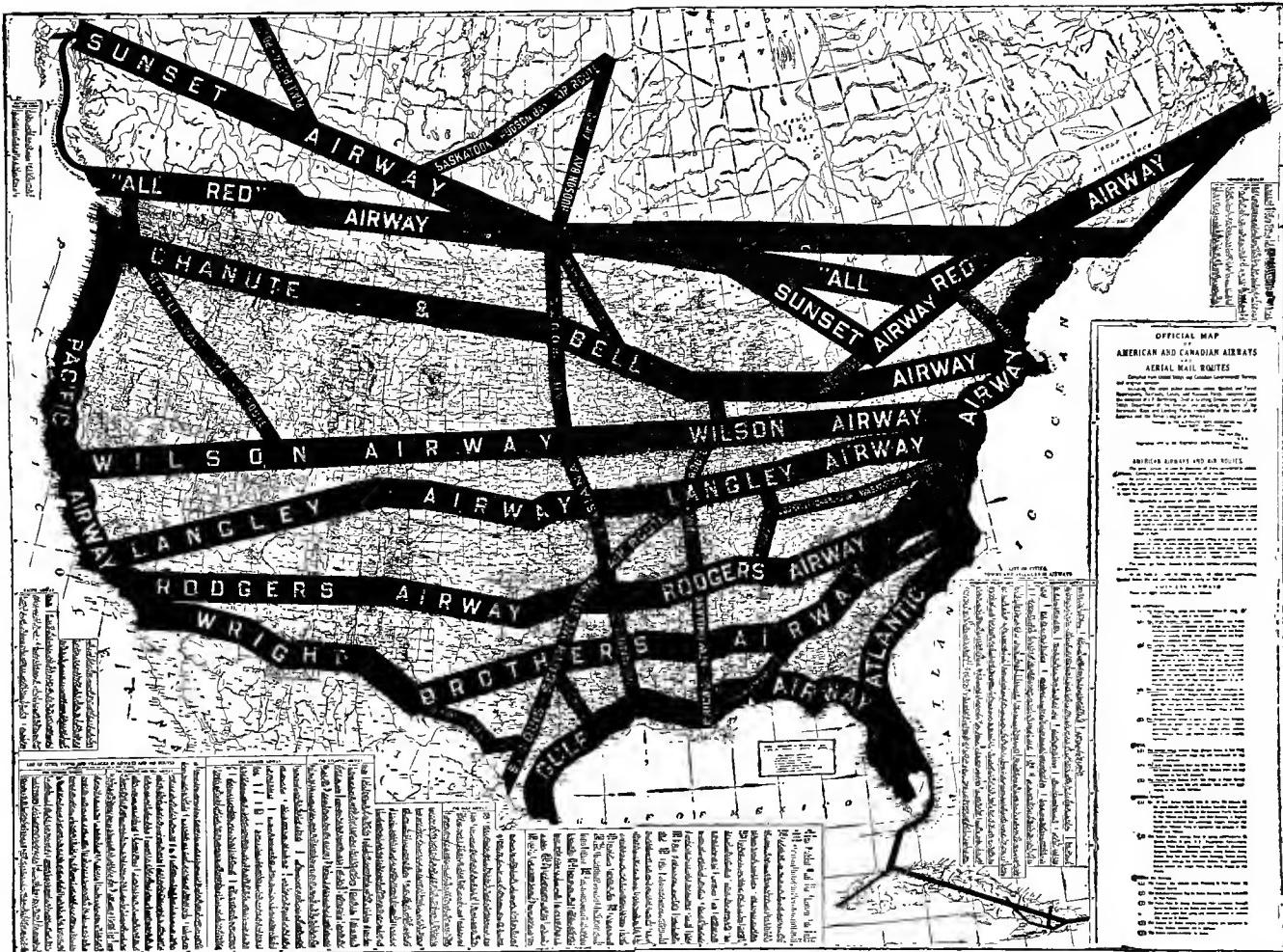
Notes



This twin-motored Lawson air liner can fly with only one motor going. As the photograph shows, the air liner is flying over New York Bay, and if it were equipped with only one motor, or was unable to fly for a reasonable distance with only one motor going, it would be in danger of having to land in the Bay in the case of one motor stopping.

Hence the necessity of requiring that twin-motored aeroplanes be capable of flying with only one motor going, and three motored aeroplanes shall be capable of flying with only two motors going. The gliding angle of the average aeroplane, when the power plant stops or when the engines stop is usually between four and eight to one. In other words, if the aeroplane stops at a height of 1,000 feet the aviator must land within a radius of from 4,000 to 8,000 feet from the point where the motor stopped. If, however, the aeroplane is equipped with two motors, and one motor can keep the aeroplane going, even if it does not maintain its altitude and cannot make its home station, it may increase the gliding angle to 1,000 to 1. In other words, if the pilot is flying at a height of 1,000 feet and one motor stops, he is not forced to pick out a landing spot immediately under him, but can proceed on for many miles and reach a suitable aerodrome where he can land with safety to the aircraft and to the passengers. Multi-motored aeroplanes and people traveling in them, are, therefore, also entitled to lower insurance rates. (See Chapter on "Insurance of Person and Property from Aircraft Damage in War and Peace.")

Map of the Aeronautic Geographical Divisions of the United States and Canada



Reproduction of the new watt map of the U. S. and Canadian Airways and Air Routes, showing the aeronautic geographic divisions of the United States and Canada. On the original, which is 50 x 43 inches in size, the airways and air routes are printed in red, so that the names of all the communities are plainly readable. This remarkable map divides the United States into distinct geographical divisions, so that when an aviator states that he is going to fly across the continent, he is not obliged to give all the names of all the cities he is going to fly over or to. He just states that he is going to fly over a given airway and that conveys the information regarding the route he will follow. The airways on this map are 80 miles wide, to provide a scientific and practical solution to the difficult problem of operating permanent aerial transportation lines at night and in fogs, over fixed routes, without danger of collisions between aircraft flying in opposite directions.

The 30 mile airways have two "one-way streets." Aircraft will keep to the right while traveling; and even if they should deviate from their course, owing to wind drift, they would not be in danger of encountering aircraft flying on the same airway from the opposite direction.

Printed on this map are the aerial "rules of the road," and an explanation of the three levels adopted for air travel, viz., the "interurban level," for aircraft flying between cities less than 500 miles apart; the "interstate level," for aircraft navigating between points from 500 to 1,000 miles apart, and the "international level," for aircraft navigating between points 1,000 miles or over apart. The altitudes of these levels are 5,000, 10,000, and 15,000 feet respectively.

This map is compiled from United States and Canadian Government surveys and other sources, and includes the latest public surveys, and Indian, Military and Forest Reservation, railroads, canals and national parks. It was prepared by the Aeronautic Maps Association. Copies can be had from the Aeronautic Library, 299 Madison Avenue, New York City, N. Y.

their registration number and always be truthful about it.

Then another difficulty arises. A small percentage of the pilots and passengers of a thousand aircraft can ask enough questions and information by radiophone to paralyze the poor air cop or drive him to the frigid zone!

Establishing One-Way Air Street and Altitude "Levels" Will Solve Most Difficult Problems of Air Traffic

To meet the special conditions of the United States as regards aerial navigation and air traffic, a system of airways has been established, together with a system of altitude "levels," for different classes of air traffic, which solve the problems.

The airways are shown in the accompanying map.

There are eight main American airways, as follows:

(1) *The Wilson Airway*, named after President Wilson in 1916. It extends from New York to San Francisco.

(2) *The Wright Brothers Airway*, named after Orville and Wilbur Wright, the American pioneers, who gave the world the first practical aeroplane. It extends from Washington to San Diego, Cal., passing through South Carolina, where the Wright Brothers conducted their first experiments.

(3) *The Langley Airway*, named after Professor Samuel Pierrepont Langley, the pioneer experimenter in aeronautics. It extends from Philadelphia, Pa., to Santa Barbara, Cal. This terminal was selected in honor of Mr. William

H. Bliss, who gave the funds for the organization in 1915 of the First Reserve Aero Company, which resulted in training 300 aviators at private expense, who were eventually taken over by the U. S. Army and Navy, and were the first American aviators to go to France after America's entry into the war.

(4) *The Chanute and Bell Airway*, named after the American experimenters in aviation, Octave Chanute, who encouraged and assisted the Wright Brothers, and Alexander Graham Bell and Mrs. Bell, who paid for the early experiments of Glenn H. Curtiss. This airway extends from Boston, Mass., to Seattle, and Portland, Oregon.

(5) *The Rodgers Airway*, named in honor of Calbraith Perry Rodgers, the American aviator who was the first to make a trans-continental flight, in 1911. The Rodgers Airway extends from Newport News and Norfolk, Virginia, to Los Angeles, California.

(6) *The Atlantic Airway* extends from Bangor, Maine, to Key West, Florida, and includes every city and community on the Atlantic Seaboard.

(7) *The Gulf Airway* extends from Key West to the mouth of the Rio Grande, following the coast, and includes every city and community on the Gulf seaboard.

(8) *The Pacific Airway* extends from San Diego to Puget Sound, following the coast line, and includes every city and community on the Pacific seaboard.

The Canadian Airways are as follows:

(1) *The "All-Red" Airway* extends from St. Johns, the gateway of the trans-Atlantic Air Route, to Quebec, Montreal, Ottawa, and

straight west along the line of the Canadian Pacific Railroad to Fort William and Winnipeg, and from Winnipeg to Regina, Moose Jaw, Medicine Hat, Lethbridge, Calgary, through the Canadian National Parks, to Vancouver, the gateway of the Pacific and Victoria.

(2) *The Sunset Airway* extends from St. Johns, Newfoundland, to Sydney, Halifax, St. John (N. B.), Fredericton, Edmundston, Quebec, Three Rivers, Montreal, Cornwall, Prescott, Brockville, Kingston, Belleville, Coburg, Toronto, Camp Borden, Owen Sound, Sault Ste. Marie, Port Arthur, Winnipeg, Prince Albert, Saskatoon, through the National Buffalo Park, Edmonton, Mount Robson and Jasper Parks, and Prince Rupert on the Pacific.

The adoption of airways to be geographic divisions, analogous to the standard time zones, and altitude "levels" for different kinds of aerial transportation will solve the most difficult problems. When an aviator states that he is going to fly across the continent and will follow a given airway it will not be necessary to describe the route he expects to follow as would be necessary otherwise.

The adoption of altitude levels for the regulation of air traffic provide:

(1) That aircraft navigating between points less than 500 miles apart shall not go over the 5,000 feet altitude, which may be called the "Interurban" level; aircraft navigating between points from 500 miles to 1,000 miles apart shall travel at a height of between 5,000 and 10,000 feet, which may be called "Interstate" level; aircraft navigating between points 1,000 miles apart or over shall travel at heights of 10,000

feet and over, which may be called the "International" level.

Dividing air travel to different levels will prevent accidents due to loss of altitude in flight and similar causes.

(2) To protect against accidents due to drifting in fogs and darkness, it is wise to make the national and international airways 80 miles wide, and aircraft will travel on the right side of the center of the airway, until they approach their destination. Each airway becomes, therefore, divided into two "one-way streets" thirty-five miles wide, respectively. The ten-mile belt in the center is a neutral safety zone where crippled aircraft may navigate slowly while making repairs, aircraft on fire will repair while the fire is extinguished and the aerial policemen will have their posts.

The adoption of "levels" proved satisfactory for aerial patrol work during the war. The fighting squadrons were sent to protect the photographic and artillery squadrons at different levels, over different sectors and the aviators on duty at a given level, over a given sector had no excuse if they failed to protect a photographic plane in that level and that sector. The duties of the aerial policemen will be carried out in a similar manner.

Rules of the Air and Regulations for Preventing Collisions

Rules of the air have been issued from time to time by the Aero Clubs and the International Aeronautic Federation and they have been adopted by Governments for use at Army and Navy air stations and have been incorporated

Notes

in the International Regulations for Aerial Navigation. See "Rules of the Air," "Preventing Collisions," "Aerodrome Rules for Taking Off and Landing," etc.

In the interest of standardization and to avoid confusion and hardship to aviators and air travellers it is urged that the international rules of the air be adopted by states and cities contemplating aerial legislation.

Flying Boats and Hydroaeroplanes Are Subject to Steamboat Inspection Regulations

A flying boat is essentially a boat with wings, a hydroaeroplane is essentially an aeroplane equipped with one or two floats instead of wheels, to enable it to rise from and land on water.

The N.C. seaplanes used for the transatlantic flight were of the flying boat type. They were built to stand the rigors of rough seas in case they were forced to land—and they did.

The N.C. 3, in command of Commander John H. Towers, U.S.N., came down on the water to get its bearings during the transatlantic flight and was damaged as it reached the water and was unable to rise again. The rough sea began to pound it and wash over it, but the flying boat stood the heavy storm fairly well. The crew had a hard time while the boat drifted 205 miles in the storm, but it is remarkable that the boat stood the pounding of the raging sea so long.

While on the water, before they start for and after they land from a flight flying boats and hydroaeroplanes are subject to the steamboat inspection regulations.

Right of Action by Private Landowners Against Airmen for Damage to Person or Property, Trespass and Nuisance

A number of actions have been started during the past ten years by private landowners against airmen for damage to person and property, trespass and nuisance.

The Courts have invariably sustained the action for damages but not the action for trespass and nuisance.

It is evident that to grant that the landowners' right to the air space over his land extends *usque ad coelum* would be fatal to aerial navigation. On the other hand, to allow unrestricted flying over private property at any altitudes would seem to violate the right of landowners.

The French Courts held that the landowners' rights extend only as far as the tops of the buildings and trees and above that the air is free to all. British authorities have supported this doctrine in holding that the landowner's right only extends to a height sufficient for the reasonable employment of the land.

The British Aerial Transport Committee, which gave special consideration to this subject, has made the following recommendations on the subject:

"Admittedly persons on land are practically powerless to ensure their safety by precautionary measures against damage caused by the fall of aircraft or of objects carried therein. It is a matter of some doubt whether under existing principles of law, persons suffering such damage would be called on to prove an affirmative case of negligence or intentional trespass. It is possible that the Courts might hold aircraft to be within the class of those things which the owner keeps or uses at his peril. We think it preferable that the

principles applicable should be defined by legislation rather than that they should be left for solution by a series of judicial decisions; we think, too, that as far as damage done by aircraft is concerned, the deprivation of the landowner of what is almost certainly an existing right of property should be compensated by what will be in effect an insurance of himself and his property against such damage. Nor do we think that in practice the expense of insuring himself against third party risks will prove very burdensome to the owner of aircraft.

"As affecting the question of nuisance or trespass to the property of the landowner in the air space above his land, we have given careful consideration to the possibility of defining some altitude, flying below which would involve a civil liability on the owner of aircraft. We have come to the conclusion that to attempt to prescribe any such altitude is impracticable, and that it will be sufficient to protect the landowner by giving him a specific right of action for damages for actual nuisance created in breach of flying regulations. Since nuisances from aircraft are most likely to arise in connection with the ascent from and landing at aerodromes, we recommend that special attention should be paid to the flying regulations applicable to such ascent and landing."

The Committee thinks that the following recommendations would give reasonable protection or compensation to landowners and, on the other hand, impose on aviators no obligation which could not be covered by insurance at reasonable rates, and so avoid hampering the development of civil aeronautics. The Com-

mittee therefore recommended that the Bill should provide as follows:

"(a) No action for trespass should lie except for material damage to person or property, whether caused by flight, ascent or landing or the fall of objects from aircraft.

"(b) That this right of action for trespass should include one for injury caused by the assembly of persons on the landing or ascent of aircraft elsewhere than at authorized aerodromes or landing places.

"(c) That the obligation of an aviator in an action for trespass should be absolute, negligence not being a necessary element in his liability and 'unavoidable accident' no defense.

"(d) That an action for nuisance should lie for damages only, and then only if breach of flying regulations are proved as well as actual nuisance.

"(e) That special flying regulations should be made in connection with the ascent and landing from or at authorized aerodromes and landing places, and for the area around the aerodrome or landing place over which aircraft must necessarily be at low altitudes. Nuisance and injury to the value of property caused by the existence of aerodromes and landing places are met by paragraph 10 of this report.

"(f) That the power of seizure and detention proposed in Clause 12 should be limited to what is necessary to establish the identity of the aviator and his aircraft.

"Reasonable apprehensions may be entertained of nuisance being caused by the frequent flight of aircraft at low altitudes along regular routes, but the Committee are not in a position at present to make any recommendations as to limitations of altitude being prescribed by regulations."

Notes

INSURANCE OF PERSON AND PROPERTY FROM AIRCRAFT DAMAGE IN WAR AND PEACE

In the report of the British Aerial Transport Committee is found the following recommendation:

"Admittedly persons on land are practically powerless to ensure their own safety by precautionary measures against damage caused by the fall of aircraft or of objects carried therein. It is a matter of some doubt whether under existing principles of law persons suffering such damage would be called upon to prove an affirmative case of negligence or intentional trespass. It is possible that the Courts might hold aircraft to be within the class of those things which the owner keeps or uses at his peril. We think it preferable that the principles applicable should be defined by legislation rather than that they should be left for solution by a series of judicial decisions; we think, too, that as far as damage done by aircraft is concerned the deprivation of the landowner of what is almost certainly an existing right of property should be compensated by what will be in effect an insurance of himself and his property against such damage. Nor do we think that in practice the expense of insuring himself against third party risks will prove very burdensome to the owner of aircraft."

The subject of insurance of person and property from aircraft damage is new, but the principle was tried in Great Britain during the war. Following is the statement which Mr. Runciman, President of the British Board of Trade, made in the House of Commons in July, 1915, announcing the Government Insurance Plan:

On June 21st I appointed a Committee consisting of the following gentlemen: Mr. Frederick Huth Jack-

son, Sir Raymond Beck, Mr. Cuthbert Heath, Mr. Roger Owen, and Sir Gerald Ryan,

to consider, without prejudice to the question of policy, whether a scheme can be devised to cover loss and damage by bombardment and aircraft in so far as such loss and damage are not covered by the terms of the ordinary fire insurance policy. Any scheme prepared must be on the basis of reasonable contribution being paid by the owners of property insured towards the cost of insurance.

The Committee have now formulated a scheme which the Government are prepared to adopt. The Committee found that the best practicable method of dealing with the problem would be to invoke the assistance of the fire insurance companies. They accordingly approached a number of the large fire insurance companies, and as the result of their inquiries they based their report on the assumption that a sufficient number of fire insurance companies would be prepared to act as agents for the Government in the issuing of policies and the collection of premiums, and in the initial proceedings in connection with loss assessments.

They reported that it would also be necessary to establish a special State Insurance Office to supplement the work of the fire offices which act as agents for the Government.

Nature of Risks Covered

The scheme would cover loss and damage to the property insured (with the exception of deterioration, loss of market, or loss of profit) caused directly or indirectly by aircraft or bombardment in so far as the loss or damage would not be covered by an ordinary fire policy containing a clause in the following words:

This policy does not cover loss or damage, occasioned by or happening through invasion, foreign enemy, riot, civil commotion, or military or usurped power.

Notes

Rent may be insured as well as specific loss or damage to property.

Insurance against bombardment is optional. Two policies have been drawn up, one against aircraft risks only; the other against aircraft and bombardment risks. The terms of these policies are shown in Schedules 1 and 2 of the report which will shortly be circulated.

The insurance of goods on board ship would not be covered under the scheme, nor would ships on the slips.

In the case of bombardment, the cover is limited to bombardment by hostile guns not landed on British territory.

Co-operation of Insurance Companies

It is proposed that the State should enter into an agreement with any approved fire insurance company, authorising the company to issue policies on behalf of the State, and to collect the premium thereon.

The principle of the arrangement is that persons insured against fire in an approved company can take out through the same company a policy against aircraft and bombardment.

A remuneration of 10 per cent. on the gross premiums would be paid to the companies to cover all expenses connected with the issue of the policies, the collection of premiums, and the expenses of the initial proceedings in connection with the adjustment of claims, with the exception of the assessors' fees, which would be paid by the Government.

All claims to be finally settled and paid in cash by the State Insurance Office within thirty days of the adjustment of the claim.

The accounts between the Government and the companies to be settled monthly.

Any company which elects to act as agent for the Government may not accept risks on its own account.

The State office will insure property which is insured against fire, elsewhere than with the approved companies acting as agents for the Government, and it will also insure property which is not insured against fire at all, and also the property of the persons who elect to deal direct with the State Insurance Office.

The office will be under the administration of a

Committee of Experts, including representatives of Lloyd's, fire insurance offices, and the Government.

In addition to issuing policies of insurance, the State office will receive the monthly accounts from the approved insurance companies, and will finally settle and pay all claims.

The State office will not accept reinsurances.

Premium Rates

The rates to be charged will be the same for all districts, and are as follows:

	Against Aircraft only.	Against Aircraft and Bombardment.
	s. d.	s. d.
1. Building, rent, and contents of private dwelling houses and buildings in which no trade or manufacture is carried on.	2 0	3 0
2. All other buildings and their rents....	3 0	4 6
3. Farming stocks (live and dead).....	3 0	4 6
4. Contents of all buildings other than those specified in 1 and 5.....	5 0	7 0
5. (A) Merchandise at docks and public wharves in carrier's and canal wharves and yards, in public mercantile storage warehouses and in transit by rail	7 6	10 0
(B) Timber in the open.....		
(C) Mineral oil tanks and stores wholesale		

N.B.—(1) Insurance under Class 5 may be accepted for short periods at the following rates:

Six months—Three-fourths of the annual premium.

Three months—One-half of the annual premium.
One month—One-quarter of the annual premium.

All the other rates are for twelve calendar months or any shorter period.

N.B.—(2) Buildings, rent, and contents must be specified separately.

I am inviting some fifty of the larger fire insurance companies to co-operate with us in working this scheme by acting as agents for the Government, and if as I hope and expect this invitation is accepted, it should be possible to commence the scheme at the beginning of next week.

Notes

This Policy provides indemnity for loss of life, limb, sight and time, caused by accidental bodily injuries, including aviation accidents, to the extent herein provided

Insures women for death, sight and dismemberment losses only

AVIATION ACCIDENT TICKET POLICY

The Travelers Insurance Company HARTFORD, CONNECTICUT

HEREBY INSURES the person whose name is written upon the stub of this ticket policy in the possession of the Company bearing even number and date herewith, and signed to the application endorsed hereon, against bodily injuries effected during the term of this insurance solely by external, violent and accidental means, including injuries sustained by the Insured through means as aforesaid, while in any vehicle or mechanical device for aerial navigation, or in falling therefrom or therewith, or while preparing or supervising the preparation of any such vehicle or device for operation, ascension or descent or while operating, or handling any such vehicle or device, subject to the conditions and limitations herein contained:

a. If such injuries shall independently of all other causes result in death within ninety days from the date of accident, the Company will pay in lieu of any other indemnity \$5,000 to the executors, administrators or assigns of the Insured, or b. If such injuries independently of all other causes shall within ninety days from the date of accident result in the loss of both hands or both feet or one hand and one foot by severance at or above the wrist or ankle joints, or in the entire and irrecoverable loss of sight of both eyes, the Company will pay the insured in lieu of any other indemnity \$5,000, or c. If such injuries independently of all other causes shall within ninety days from the date of accident result in the loss of either hand or foot at or above wrist or ankle joint, or in the entire and irrecoverable loss of sight of one eye, the Company will pay the insured in lieu of any other indemnity \$2,500. d. If the Insured be a male and such injuries do not result in a loss covered by Clause a or b or c, for the period commencing with the date of accident, not exceeding two hundred consecutive weeks, during which he shall be continuously and wholly disabled by such injuries independently of all other causes, from performing every duty pertaining to his business or occupation, the Company will pay to him \$25.00 a week, or, for the period not exceeding twenty-six consecutive weeks, commencing with the date of accident or immediately following period of total disability, during which he shall be continuously and wholly disabled by such injuries from performing one or more important daily duties pertaining to his occupation, the Company will pay to him \$12.50 a week. In no case shall the indemnity payable for total and partial disability combined exceed two hundred weeks.

STANDARD PROVISIONS. 1. This policy includes the endorsements and attached papers, if any, and contains the entire contract of insurance. No reduction shall be made in any indemnity herein provided by reason of change in the occupation of the insured or by reason of his doing any act or thing pertaining to any other occupation. 2. No statement made by the applicant for insurance not included herein shall avoid the policy or be used in any legal proceeding hereunder. No agent has authority to change this policy or to waive any of its provisions. No change in this policy shall be valid unless approved by an executive officer of the Company and such approval be endorsed hereon. 3. If default be made in the payment of the agreed premium for this Policy, the subsequent acceptance of a premium by the Company or by any of its duly authorized agents shall reinstate the policy, but only to cover loss resulting from accidental injury thereafter sustained. 4. Written notice of injury on which claim may be based must be given to the Company within twenty days after the date of the accident causing such injury. In event of accidental death immediate notice thereof must be given to the Company. 5. Such notice given by or in behalf of the Insured or Beneficiary, as the case may be, to the Company at 700 Main Street, Hartford, Connecticut, or to any authorized agent of the Company, with particulars sufficient to identify the Insured, shall be deemed to be notice to the Company. Failure to give notice within the time provided in this policy shall not invalidate any claim if it shall be shown not to have been reasonably possible to give such notice and that notice was given as soon as was reasonably possible. 6. The Company upon receipt of such notice will furnish to the claimant such forms as are usually furnished by it for filing proofs of loss. If such forms are not so furnished within fifteen days after the receipt of such notice, the claimant shall be deemed to have complied with the requirements of this policy as to proof of loss upon submitting within the time fixed in the policy for filing proofs of loss, written proof covering the occurrence, character and extent of the loss for which claim is made. 7. Affirmative proof of loss must be furnished to the Company at its said office in case of claim for loss of time from disability within ninety days after the termination of the period for which the Company is liable, and in case of claim for any other loss, within ninety days after the date of such loss. 8. The Company shall have the right and opportunity to examine the person of the insured when and so often as it may reasonably require during the pendency of claim hereunder, and also the right and opportunity to make

an autopsy in case of death where it is not forbidden by law. 9. All indemnities provided in this Policy for loss other than that of time on account of disability will be paid immediately after receipt of due proof. 10. Upon request of the insured and subject to due proof of loss all accrued indemnity for loss of time on account of disability will be paid at the expiration of each four weeks during the continuance of the period for which the Company is liable, and any balance remaining unpaid at the termination of such period will be paid immediately upon receipt of due proof. 11. Indemnity for loss of life of the insured is payable to the Beneficiary if surviving the Insured, and otherwise to the estate of the Insured. All other indemnities of this policy are payable to the Insured. 12. If the Insured shall at any time change his occupation to one classified by the Company as less hazardous than that stated in the policy, the Company, upon written request of the Insured and surrender of the policy, will cancel the same and will return to the Insured the unearned premium. 13. Consent of the Beneficiary shall not be requisite to surrender or assignment of this policy, or to change of Beneficiary, or to any other changes in the policy. 14. No action at law or in equity shall be brought to recover on this policy prior to the expiration of sixty days after proof of loss has been filed in accordance with the requirements of this policy, nor shall such action be brought at all unless brought within two years from the expiration of the time within which proof of loss is required by the policy. 15. If any time limitation of this policy with respect to giving notice of claim or furnishing proof of loss is less than that permitted by the law of the state in which the Insured resides at the time this policy is issued, such limitation is hereby extended to agree with the minimum period permitted by such law. 20. The insurance under this policy shall not cover any person under the age of eighteen years nor over the age of sixty-five years. Any premium paid to the Company for any period not covered by this policy will be returned upon request.

ADDITIONAL PROVISIONS: e. The insurance hereunder shall be void as to persons maimed, crippled or deformed, or bereft of reason, sight or hearing, and the Company will return on demand to any such person, his or her executors, administrators or assigns, the premium paid therefor. f. This insurance shall not cover injuries sustained by the Insured while riding in or operating any vehicle or mechanical device for aerial navigation while such vehicle or mechanical device is flown, driven or manipulated in any way or for any purpose contrary to law, or in any race, or speed, endurance, or altitude test, or public exhibition flight, or in aerial acrobatic, or trick or stunt flying, or for testing, or instruction, or for war or military purposes. g. This insurance covers only injuries sustained within the limits of the United States and Canada in North America, south of the sixtieth degree of North Latitude, and not exceeding ten miles at sea from the coastline of either country. h. This insurance shall not cover accident, injury, disability, or death, resulting wholly or partly, from any of the following, to wit: disease in any form, fits, vertigo, sunstroke, firearms, fighting, war or riot, nor shall this insurance cover suicide, sane or insane, or injuries, fatal or non-fatal, sustained by the Insured while insane or intoxicated, while violating law, resisting arrest or fleeing from justice. i. Insurance on any person under ticket policies in this Company is limited to the principal sum of \$5,000 indemnity for injuries resulting in death, and \$25.00 weekly indemnity for wholly disabling injuries; the Company will return on demand to the Insured or to his or her executors, administrators or assigns, all premiums paid for ticket policies in excess thereof. No provision of the charter, constitution or by-laws of the Company shall avoid the insurance hereunder or be used in evidence or defence of any claim arising under this policy. j. The insurance hereunder shall be in force from the date and hour stamped or written hereon until 4:00 A. M. of the day following. The premium for this insurance for passengers in aeroplanes is \$5.00 for men, \$4.00 for women; for pilots of aeroplanes \$10.00 for men, \$8.00 for women.

IN WITNESS WHEREOF, The Travelers Insurance Company has caused this Ticket policy to be signed by its President and Secretary, but the policy shall not be binding upon the Company unless the application form endorsed hereon is completed and signed by the Insured.

John Howard
Secretary.

L. H. Barnes
President.

APPLICATION: I hereby apply for policy to be based on the following statements:

What is your age? 50 yrs Sex? Male

Will you ride in aeroplane as passenger or pilot? Pasenger

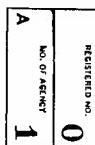
What is your full name? Alan R. Hawley

(SIGN HERE)

*Payne and Richardson Inc.
Aeronautic Office Bldg.
Albany Ave and South Broad,
Atlantic City, N. J.*

Reproduction of the first aero insurance policy issued in the United States. It was issued at Atlantic City, N. J., during the Second Pan-American Aeronautic Congress to Mr. Alan R. Hawley, then president of the Aero Club of America.

May 6 1919
Date
Hour 9 AM





Joy-riding in the air, a form of aerial acrobacy which is spectacular but which will subject those who indulge in it to prosecution and cause the cancellation of insurance policies.

Face p. 109

It is not proposed to limit the scheme necessarily to these fifty companies. If any other fire insurance companies would be willing to act as agents for the Government in working this scheme, and will be good enough to send me their names, their application to be placed on the list of approved companies for this purpose would be welcomed and carefully considered.

Existing Policies Unaffected

Mr. Fell (U., Yarmouth): Will Lloyd's continue to issue insurances?

Mr. Lough (R., Islington, W.): Has the right hon. gentleman made any arrangement with regard to insurances already made?

Mr. Runciman: The Government do not propose to take over any insurances already made. Lloyd's will be able to conduct their business if they can attract custom at cheaper rates than those provided by the Government.

An Hon. Member: Have any arrangements been made with regard to personal injuries?

Mr. Runciman: No, sir. We have not provided for personal injury.

Mr. Price (R., Edinburgh, C.): Will the right hon. gentleman give the House an opportunity of considering these terms? Those connected with insurance see that many of them are very absurd.

Mr. Asquith: I will consider that.

Sir W. Pearce (R., Limehouse): Is the right hon. gentleman including risks of incendiary fires by enemy agents?

Mr. Peto (U., Devizes): How does this affect compensation already granted from insurance premiums in previous air raids or bombardments?

Mr. Runciman: In so far as compensation has already been granted, it obviously will not be interfered with. We do not provide against incendiary fires. We are only asked to provide a scheme against damage done by aircraft or bombardment.

On March 1st, 1917, a reduction of 50 per cent. of all premiums went into effect, subject to the minimum premium not being reduced below two shillings.

In July, 1917, the Lord Mayor of London headed a deputation, which comprised, among others, the Lord Mayor of York, the Mayor of Tynemouth, the Mayor of Ramsgate, the Mayor of Walsall, various metropolitan mayors, and the chairmen of local councils and representatives of chambers of commerce and other bodies, from the Committee on War Damage, representing 718 municipalities with a population of over 28,000,000, which waited upon the Premier to put forward their case for the State assuming liability for damage done by aircraft raids to life or property. The Premier was accompanied by Dr. Addison (the Minister of Munitions) and Sir David Henderson (Director of the Air Service). Gen. Smuts was also present.

The Lord Mayor of London, in introducing the deputation, said they desired to urge upon the Government the necessity of providing, out of national funds, compensation to those who had suffered damage from the air and other attacks of the enemy.

The Lord Mayor of York urged that the Government should accept full and unqualified responsibility for damage and injury arising out of the defence of the country as the authorities did in the case of riot.

The Premier asked if he could be told something about the scheme, and not the general principles. Why was the present scheme not adequate? That was what he really wanted to know.

The Mayors of Walsall and Ramsgate then spoke as to the damage done in their areas, and stated that the scheme was not adequate for

them. They were followed by the Mayor of Tynemouth.

The Prime Minister, replying to the deputation, said: "You have presented your case with great moderation, and with great force. You represent towns, some of which have sustained a good deal of damage through these insensate and barbarous raids. There is at the present moment, I understand, an insurance scheme on fairly generous and liberal lines for dealing with this problem, but I am not sure that it is completely applicable to the facts of the case, for many reasons. First of all, there is always a difficulty in making such schemes known to smaller people, and it is not always that they can protect themselves against such attacks. There are not merely tradesmen and factory owners and owners of big properties who are suffering, but there are poor people who have got their all destroyed in these air raids, and it is just as important to them as the great factories must be to the people who are in more prosperous conditions, and they are just as entitled to protection.

"I am not sure that it is always a complete answer to them to say, 'You could have insured under some scheme.' It takes a long time, as any one of you who is acquainted with insurance companies knows, to bring the benefits of insurance to every class. You want an army of agents and an army of persuasive tongues. We have no time for that sort of thing in this war. I think myself that in principle you have certainly made out a case. I should like to consider the details carefully, and my suggestion to you is that you appoint, say, two or three, at the outside, of your number, to be in communication with me or any particular department or

departments in the Cabinet who are ordered to deal with the question, for further consultation. The French Government had given a general pledge that the devastated areas should be restored. The devastation there is on a more wholesale and a more deplorable scale, and the losses inflicted are terrible. The burden which rests on the French Government will be all the greater. But whether great or small, the principle is the same. We must protect our people as far as we can against the consequences of these barbarities, and we ought to do so without distinction of rich or poor. Therefore, in principle, I accept the case you have put before me on behalf of the Government, but I should like to consider the details further, and I invite you to meet and give me the names of three of your number with whom I can have further consultation."

In March, 1919, in the British House of Commons two M. P.'s, Mr. Kennedy Jones and Sir Herbert Nield, raised the question of aircraft and bombardment insurance. Mr. Bridgeman for the Government, informed the former that the moneys resulting from aircraft insurance in the hands of the various insurance companies who, on behalf of the Government, effected aircraft insurance were purely nominal, as they had been regularly paid over to the Government in monthly accounts in accordance with agreement. The excess of premium over payments, which amounted to over ten millions, has, of course, gone into the National Exchequer. To Sir Herbert Nield he replied that the War Risks Insurance Office could not state the aggregate sum received for premiums on Government insurance against damage by hostile aircraft and

bombardment which were current when the Armistice was signed, nor what portion of this sum represented the unexpired periods of insurance. The risk, he added, had not ceased to attach with the signing of the Armistice, as aircraft policies still in force cover the risk of damage by aircraft of the Royal Air Force, and aircraft and bombardment policies cover, in addition, the risk of damage by the explosion of mines which drift on the coast.

In December, 1918, appeared the following item in an English publication:

A Damaged Church

All Saints' Church, St. Ives, Huntingdon, was seriously damaged last March by a British aeroplane colliding with the spire. The spire was cut in half, and two portions of it fell into the north and south aisles, causing great gaps in the roof and much internal damage. The aviator was killed.

The Government will pay £3,873 towards the cost of repairing the church, leaving £3,216 to be provided. As there is a population of only 3,015 the vicar, the Rev. O. W. Wilde, and the churchwardens appeal to the public for aid in restoring the beautiful fifteenth century building.

In August, 1919, in the House of Commons, Sir H. Nield, M. P., asked the President of the

Board of Trade whether the existing and current policies issued under the Government scheme of insurance against damage by aircraft entitled the holders to be indemnified against damage done by Government-owned aircraft exercised and controlled by members of the Royal Air Force or other Services of the Crown and by civilian-owned aircraft.

Mr. Bridgeman answered: Damage caused by aircraft employed by the British Government is covered under the Government Aircraft Policy, but damage consequent upon the use of aircraft other than those under Government control or ownership is not so covered.

Aircraft Damage in United States

Damages done by military aircraft in the United States have been paid by the Government. Damages done by aviators in the employ of companies have been paid by the companies.

The Aero Protective Association, Inc., of New York, was pioneer in putting into effect aircraft insurance to cover all kinds of damages. The premiums for third party damage are sufficiently low to permit aviators to carry this kind of insurance.

Notes

AERIAL LAWS WHICH CONFLICT WITH THE CONSTITUTION OF THE UNITED STATES

On a number of occasions aerial laws have been proposed in the United States which would conflict with the spirit of the Constitution of the United States. Some of the provisions of the British Aerial Navigation Act of 1919 would, if adopted by the United States and applied at date of writing by some of the officials, conflict with clause 6 of Section 9 of Article I of the Constitution.

The enforcement of clauses 1, 3, and 10 of Section 8, Article I, of the Constitution will force Congress to enact extensive aerial laws and provide means for enforcing these laws.

The Constitution of the United States is printed herewith for the convenience of law-makers and students.

Constitution of the United States

The Constitution originally consisted of a Preamble and seven Articles, and in that form was "Done in Convention by the Unanimous Consent of the States present the Seventeenth Day of September in the Year of our Lord one thousand seven hundred and Eighty seven and of the Independence of the United States of America the Twelfth." The Constitution was declared in effect on the first Wednesday in March, 1789. The signers of the original Constitution, by virtue of their membership in Congress, were:

Go. WASHINGTON, *Presidt. and deputy from Virginia.* NEW HAMPSHIRE—John Langdon, Nicholas Gilman. MASSACHUSETTS—Nathaniel Gorham, Rufus King. CONNECTICUT—Wm. Saml. Johnson, Roger Sherman. NEW YORK—Alexander Hamilton.

NEW JERSEY—Wil. Livingston, David Brearley, Wm. Patterson, Jona. Dayton. PENNSYLVANIA—B. Franklin, Robt. Morris, Thos. Fitzsimons, James Wilson, Thomas Mifflin, Geo. Clymer, Jared Ingersoll, Gouv. Morris. DELAWARE—Geo. Read, John Dickinson, Jaco. Broom, Gunning Bedford jun, Richard Bassett. MARYLAND—James McHenry, Danl. Carroll, Dan. of St. Thos. Jenifer. VIRGINIA—John Blair, James Madison, Jr. NORTH CAROLINA—Wm. Blount, Hu. Williamson, Richd. Dobbs Spaight. SOUTH CAROLINA—J. Rutledge, Charles Pinckney, Charles Cotesworth Pinckney, Pierce Butler. GEORGIA—William Few, Abr. Baldwin. Attest: WILLIAM JACKSON, *Secretary.*

The Constitution was ratified by the thirteen original States in the following order:

Delaware, December 7, 1787, unanimously.
Pennsylvania, December 12, 1787, vote 46 to 23.
New Jersey, December 18, 1787, unanimously.
Georgia, January 2, 1788, unanimously.
Connecticut, January 9, 1788, vote 128 to 40.
Massachusetts, February 6, 1788, vote 187 to 168.
Maryland, April 28, 1788, vote 63 to 12.
South Carolina, May 23, 1788, vote 149 to 73.
New Hampshire, June 21, 1788, vote 57 to 46.
Virginia, June 25, 1788, vote 89 to 79.
New York, July 26, 1788, vote 30 to 28.
North Carolina, November 21, 1789, vote 193 to 75.
Rhode Island, May 29, 1790, vote 34 to 32.

THE CONSTITUTION

Preamble

We, the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquility, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this CONSTITUTION for the United States of America.

Notes

ARTICLE I.

Section 1—(Legislative powers ; in whom vested.)

All legislative powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Section 2—(House of Representatives, how and by whom chosen. Qualifications of a Representative. Representatives and direct taxes, how apportioned. Enumeration. Vacancies to be filled. Power of choosing officers, and of impeachment.)

1. The House of Representatives shall be composed of members chosen every second year by the people of the several States, and the electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State Legislature.

2. No person shall be a Representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State in which he shall be chosen.

3. Representatives and direct taxes shall be apportioned among the several States which may be included within this Union according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three-fifths of all other persons. The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of Representatives shall not exceed one for every thirty thousand, but each State shall have at least one Representative; and until such enumeration shall be made, the State of New Hampshire shall be entitled to choose 3; Massachusetts, 8; Rhode Island and Providence Plantations, 1; Connecticut, 5; New York, 6; New Jersey, 4; Pennsylvania, 8; Delaware, 1; Maryland, 6; Virginia, 10; North Carolina, 5; South Carolina, 5, and Georgia, 3.*

4. When vacancies happen in the representation

* See Article XIV., Amendments.

from any State, the Executive Authority thereof shall issue writs of election to fill such vacancies.

5. The House of Representatives shall choose their Speaker and other officers, and shall have the sole power of impeachment.

Section 3—(Senators, how and by whom chosen. How classified. State Executive, when to make temporary appointments, in case, etc. Qualifications of a Senator. President of the Senate, his right to vote. President pro tem., and other officers of the Senate, how chosen. Power to try impeachments. When President is tried, Chief Justice to preside. Sentence.)

1. The Senate of the United States shall be composed of two Senators from each State, chosen by the Legislature thereof, for six years; and each Senator shall have one vote.

2. Immediately after they shall be assembled in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the Senators of the first class shall be vacated at the expiration of the second year, of the second class at the expiration of the fourth year, and of the third class at the expiration of the sixth year, so that one-third may be chosen every second year; and if vacancies happen by resignation, or otherwise, during the recess of the Legislature of any State, the Executive thereof may make temporary appointment until the next meeting of the Legislature, which shall then fill such vacancies.

3. No person shall be a Senator who shall not have attained to the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State for which he shall be chosen.

4. The Vice-President of the United States shall be President of the Senate, but shall have no vote unless they be equally divided.

5. The Senate shall choose their other officers, and also a President pro tempore, in the absence of the Vice-President, or when he shall exercise the office of President of the United States.

6. The Senate shall have the sole power to try all impeachments. When sitting for that purpose, they

shall be on oath or affirmation. When the President of the United States is tried, the Chief Justice shall preside; and no person shall be convicted without the concurrence of two-thirds of the members present.

7. Judgment of cases of impeachment shall not extend further than removal from office, and disqualification to hold and enjoy any office of honor, trust, or profit under the United States; but the party convicted shall nevertheless be liable and subject to indictment, trial, judgment, and punishment, according to law.

Section 4—(Times, etc., of holding elections, how prescribed. One Session in each year.)

1. The times, places, and manner of holding elections for Senators and Representatives shall be prescribed in each State by the Legislature thereof; but the Congress may at any time by law make or alter such regulations, except as to places of choosing Senators.

2. The Congress shall assemble at least once in every year, and such meeting shall be on the first Monday in December, unless they shall by law appoint a different day.

Section 5—(Membership. Quorum. Adjournments. Rules. Power to punish or expel. Journal. Time of adjournments, how limited, etc.)

1. Each House shall be the judge of the elections, returns, and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members in such manner and under such penalties as each House may provide.

2. Each House may determine the rules of its proceedings, punish its members for disorderly behavior, and with the concurrence of two-thirds expel a member.

3. Each House shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may in their judgment require secrecy; and the yeas and nays of the members of either House on any question shall, at the desire of one-fifth of those present, be entered on the journal.

4. Neither House, during the session of Congress,

shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which the two Houses shall be sitting.

Section 6—(Compensation. Privileges. Disqualification in certain cases.)

1. The Senators and Representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the Treasury of the United States. They shall in all cases, except treason, felony, and breach of the peace, be privileged from arrest during their attendance at the session of their respective Houses, and in going to and returning from the same; and for any speech or debate in either House they shall not be questioned in any other place.

2. No Senator or Representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States which shall have been created, or the emoluments whereof shall have been increased during such time; and no person holding any office under the United States shall be a member of either House during his continuance in office.

Section 7—(House to originate all revenue bills. Veto. Bill may be passed by two-thirds of each House, notwithstanding, etc. Bill, not returned in ten days, to become a law. Provisions as to orders, concurrent resolutions, etc.)

1. All bills for raising revenue shall originate in the House of Representatives, but the Senate may propose or concur with amendments, as on other bills.

2. Every bill which shall have passed the House of Representatives and the Senate shall, before it becomes a law, be presented to the President of the United States; if he approve, he shall sign it, but if not, he shall return it, with his objections, to that House in which it shall have originated, who shall enter the objections at large on their journal, and proceed to reconsider it. If after such reconsideration two-thirds of that House shall agree to pass the bill, it shall be sent, together with the objections, to the other House, by which it shall likewise be reconsidered; and if approved by two-thirds of that House it shall become a law. But in all such cases the votes of both Houses shall be determined by yeas and nays, and the names

Notes

of the persons voting for and against the bill shall be entered on the journal of each House respectively. If any bill shall not be returned by the President within ten days (Sundays excepted) after it shall have been presented to him, the same shall be a law in like manner as if he had signed it, unless the Congress by their adjournment prevent its return; in which case it shall not be a law.

3. Every order, resolution, or vote to which the concurrence of the Senate and House of Representatives may be necessary (except on a question of adjournment) shall be presented to the President of the United States; and before the same shall take effect shall be approved by him, or being disapproved by him, shall be repassed by two-thirds of the Senate and the House of Representatives, according to the rules and limitations prescribed in the case of a bill.

Section 8—(Powers of Congress.)

1. The Congress shall have power:

To lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defence and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States.

2. To borrow money on the credit of the United States.

3. To regulate commerce with foreign nations, and among the several States, and with the Indian tribes.

4. To establish an uniform rule of naturalization and uniform laws on the subject of bankruptcies throughout the United States.

5. To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures.

6. To provide for the punishment of counterfeiting the securities and current coin of the United States.

7. To establish post-offices and post-roads.

8. To promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries.

9. To constitute tribunals inferior to the Supreme Court.

10. To define and punish piracies and felonies com-

mitted on the high seas, and offences against the law of nations.

11. To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water.

12. To raise and support armies, but no appropriation of money to that use shall be for a longer term than two years.

13. To provide and maintain a navy.

14. To make rules for the government and regulation of the land and naval forces.

15. To provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions.

16. To provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the States respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by Congress.

17. To exercise exclusive legislation in all cases whatsoever over such district (not exceeding ten miles square) as may, by cession of particular States and the acceptance of Congress, become the seat of Government of the United States, and to exercise like authority over all places purchased by the consent of the Legislature of the State in which the same shall be, for the erection of forts, magazines, arsenals, dry-docks, and other needful buildings.

18. To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the Government of the United States, or in any department or officer thereof.

Section 9—(Provision as to migration, or importation of certain persons. Habeas Corpus. Bills of attainder, etc. Taxes, how apportioned. No export duty. No commercial preference. Money, how drawn from treasury, etc. No titular nobility. Officers not to receive presents, etc.)

1. The migration or importation of such persons as any of the States now existing shall think proper to admit shall not be prohibited by the Congress prior to the year one thousand eight hundred and eight, but a

tax or duty may be imposed on such importation, not exceeding ten dollars for each person.

2. The privilege of the writ of habeas corpus shall not be suspended, unless when in cases of rebellion or invasion the public safety may require it.

3. No bill of attainder or *ex post facto* law shall be passed.

4. No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken.

5. No tax or duty shall be laid on articles exported from any State.

6. No preference shall be given by any regulation of commerce or revenue to the ports of one State over those of another, nor shall vessels bound to or from one State be obliged to enter, clear, or pay duties in another.

7. No money shall be drawn from the Treasury but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

8. No title of nobility shall be granted by the United States. And no person holding any office of profit or trust under them shall, without the consent of the Congress, accept of any present, emolument, office, or title of any kind whatever from any king, prince, or foreign state.

Section 10—(States prohibited from the exercise of certain powers.)

1. No State shall enter into any treaty, alliance, or confederation, grant letters of marque and reprisal, coin money, emit bills of credit, make anything but gold and silver coin a tender in payment of debts, pass any bill of attainder, *ex post facto* law, or law impairing the obligation of contracts, or grant any title of nobility.

2. No State shall, without the consent of the Congress, lay any impost or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws, and the net produce of all duties and imposts, laid by any State on imports or exports, shall be for the use of the Treasury of the United States; and all such laws shall be subject to the revision and control of the Congress.

3. No State shall, without the consent of Congress, lay any duty of tonnage, keep troops or ships of war in time of peace, enter into any agreement or compact with another State, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ARTICLE II.

Section 1—(President; his term of office. Electors of President; number and how appointed. Electors to vote on same day. Qualification of President. On whom his duties devolve in case of his removal, death, etc. President's compensation. His oath of office.)

1. The Executive power shall be vested in a President of the United States of America. He shall hold his office during the term of four years, and, together with the Vice-President, chosen for the same term, be elected as follows:

2. Each State shall appoint, in such manner as the Legislature thereof may direct, a number of electors, equal to the whole number of Senators and Representatives to which the State may be entitled in the Congress; but no Senator or Representative or person holding an office of trust or profit under the United States shall be appointed an elector.

3. The electors shall meet in their respective States and vote by ballot for two persons, of whom one at least shall not be an inhabitant of the same State with themselves. And they shall make a list of all the persons voted for, and of the number of votes for each, which list they shall sign and certify and transmit, sealed, to the seat of the Government of the United States, directed to the President of the Senate. The President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted. The person having the greatest number of votes shall be the President, if such number be a majority of the whole number of electors appointed, and if there be more than one who have such majority, and have an equal number of votes, then the House of Representatives shall immediately choose by ballot one of them for President; and if no person have a majority, then from the five highest on the list the said House shall in like

manner choose the President. But in choosing the President, the vote shall be taken by States, the representation from each State having one vote. A quorum, for this purpose, shall consist of a member or members from two-thirds of the States, and a majority of all the States shall be necessary to a choice. In every case, after the choice of the President, the person having the greatest number of votes of the electors shall be the Vice-President. But if there should remain two or more who have equal votes, the Senate shall choose from them by ballot the Vice-President.*

4. The Congress may determine the time of choosing the electors and the day on which they shall give their votes, which day shall be the same throughout the United States.

5. No person except a natural born citizen, or a citizen of the United States at the time of the adoption of this Constitution, shall be eligible to the office of President; neither shall any person be eligible to that office who shall not have attained to the age of thirty-five years and been fourteen years a resident within the United States.

6. In case of the removal of the President from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the Vice-President, and the Congress may by law provide for the case of removal, death, resignation, or inability, both of the President and Vice-President, declaring what officer shall then act as President, and such officer shall act accordingly until the disability be removed or a President shall be elected.

7. The President shall, at stated times, receive for his services a compensation which shall neither be increased nor diminished during the period for which he shall have been elected, and he shall not receive within that period any other emolument from the United States, or any of them.

8. Before he enter on the execution of his office he shall take the foregoing oath or affirmation:

"I do solemnly swear (or affirm) that I will faithfully execute the office of President of the United States, and will, to the best of my ability, preserve,

* This clause is superseded by Article XII., Amendments.

protect, and defend the Constitution of the United States."

Section 2—(President to be Commander-in-Chief. He may require opinions of Cabinet Officers, etc., may pardon. Treaty-making power. Nomination of certain officers. When President may fill vacancies.)

1. The President shall be Commander-in-Chief of the Army and Navy of the United States, and of the militia of the several States when called into the actual service of the United States; he may require the opinion, in writing, of the principal officer in each of the executive departments upon any subject relating to the duties of their respective offices, and he shall have power to grant reprieves and pardons for offences against the United States except in cases of impeachment.

2. He shall have power, by and with the advice and consent of the Senate, to make treaties, provided two-thirds of the Senators present concur; and he shall nominate and by and with the advice and consent of the Senate shall appoint ambassadors, other public ministers and consuls, judges of the Supreme Court, and all other officers of the United States whose appointments are not herein otherwise provided for, and which shall be established by law; but the Congress may by law vest the appointment of such inferior officers as they think proper in the President alone, in the courts of law, or in the heads of departments.

3. The President shall have power to fill up all vacancies that may happen during the recess of the Senate by granting commissions, which shall expire at the end of their next session.

Section 3—(President shall communicate to Congress. He may convene and adjourn Congress, in case of disagreement, etc. Shall receive ambassadors, execute laws, and commission officers.)

He shall from time to time give to the Congress information of the state of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient; he may, on extraordinary occasions, convene both Houses, or either of them, and in case of disagreement between them with respect to

the time of adjournment, he may adjourn them to such time as he shall think proper; he shall receive ambassadors and other public ministers; he shall take care that the laws be faithfully executed, and shall commission all the officers of the United States.

Section 4—(All civil offices forfeited for certain crimes.)

The President, Vice-President, and all civil officers of the United States shall be removed from office on impeachment for any conviction of treason, bribery, or other high crimes and misdemeanors.

ARTICLE III.

Section 1—(Judicial powers. Tenure. Compensation.)

The judicial power of the United States shall be vested in one Supreme Court, and in such inferior courts as the Congress may from time to time ordain and establish. The judges, both of the Supreme and inferior courts, shall hold their offices during good behavior, and shall at stated times receive for their services a compensation which shall not be diminished during their continuance in office.

Section 2—(Judicial power; to what cases it extends. Original jurisdiction of Supreme Court. Appellate. Trial by jury, etc. Trial, where.)

1. The judicial power shall extend to all cases in law and equity arising under this Constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to all cases affecting ambassadors, other public ministers, and consuls; to all cases of admiralty and maritime jurisdiction; to controversies to which the United States shall be a party; to controversies between two or more States, between a State and citizens of another State, between citizens of different States, between citizens of the same State claiming lands under grants of different States, and between a State, or the citizens thereof, and foreign States, citizens, or subjects.

2. In all cases affecting ambassadors, other public ministers, and consuls, and those in which a State shall be party, the Supreme Court shall have original jurisdiction. In all the other cases before mentioned the

Supreme Court shall have appellate jurisdiction both as to law and fact, with such exceptions and under such regulations as the Congress shall make.

3. The trial of all crimes, except in cases of impeachment, shall be by jury, and such trial shall be held in the State where the said crimes shall have been committed; but when not committed within any State the trial shall be at such place or places as the Congress may by law have directed.

Section 3—(Treason defined. Proof of. Punishment of.)

1. Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort. No person shall be convicted of treason unless on the testimony of two witnesses to the same overt act, or on confession in open court.

2. The Congress shall have power to declare the punishment of treason, but no attainder of treason shall work corruption of blood or forfeiture except during the life of the person attainted.

ARTICLE IV.

Section 1—(Each State to give credit to the public acts, etc., of evry other State.)

Full faith and credit shall be given in each State to the public acts, records, and judicial proceedings of every other State. And the Congress may by general laws prescribe the manner in which such acts, records, and proceedings shall be proved, and the effect thereof.

Section 2—(Privileges of citizens of each State.

Fugitives from justice to be delivered up. Persons held to service having escaped, to be delivered up.)

1. The citizens of each State shall be entitled to all privileges and immunities of citizens in the several States.

2. A person charged in any State with treason, felony, or other crime, who shall flee from justice, and be found in another State, shall, on demand of the Executive authority of the State from which he fled, be delivered up, to be removed to the State having jurisdiction of the crime.

3. No person held to service or labor in one State,

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under the laws thereof, escaping into another shall, in consequence of any law or regulation therein, be discharged from such service or labor, but shall be delivered up on claim of the party to whom such service or labor may be due.

Section 3—(Admission of new States. Power of Congress over territory and other property.)

1. New States may be admitted by the Congress into this Union, but no new State shall be formed or erected within the jurisdiction of any other State, nor any State be formed by the junction of two or more States, or parts of States, without the consent of the Legislatures of the States concerned, as well as of the Congress.

2. The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular State.

Section 4—(Republican form of government guaranteed. Each State to be protected.)

The United States shall guarantee to every State in this Union a republican form of government, and shall protect each of them against invasion, and, on application of the Legislature, or of the Executive (when the Legislature cannot be convened), against domestic violence.

ARTICLE V.

(Constitution; how amended. Proviso.)

The Congress, whenever two-thirds of both Houses shall deem it necessary, shall propose amendments to this Constitution, or, on the application of the Legislatures of two-thirds of the several States, shall call a convention for proposing amendments, which, in either case, shall be valid to all intents and purposes, as part of this Constitution, when ratified by the Legislatures of three-fourths of the several States, or by conventions in three-fourths thereof, as the one or the other mode of ratification may be proposed by the Congress; provided that no amendment which may be made prior to the year one thousand eight hundred and eight shall in any manner affect the first and fourth clauses in the

Ninth Section of the First Article; and that no State, without its consent, shall be deprived of its equal suffrage in the Senate.

ARTICLE VI.

(Certain debts, etc., declared valid. Supremacy of Constitution, treaties, and laws of the United States. Oath to support Constitution, by whom taken. No religious test.)

1. All debts contracted and engagements entered into before the adoption of this Constitution shall be as valid against the United States under this Constitution as under the Confederation.

2. This Constitution and the laws of the United States which shall be made in pursuance thereof and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land, and the judges in every State shall be bound thereby, anything in the Constitution or laws of any State to the contrary notwithstanding.

3. The Senators and Representatives before mentioned, and the members of the several State Legislatures, and all executive and judicial officers, both of the United States and of the several States, shall be bound by oath or affirmation to support this Constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII.

(What ratification shall establish Constitution.)

The ratification of the Convention of nine States shall be sufficient for the establishment of this Constitution between the States so ratifying the same.

AMENDMENTS TO THE CONSTITUTION OF THE UNITED STATES

The following amendments to the Constitution, Articles I to X inclusive, were proposed at the First Session of the First Congress, begun and held at the City of New York, on Wednesday, March 4, 1789, and were adopted by the necessary number of States. The original proposal of the ten amendments was preceded by this preamble and resolution:

"The conventions of a number of the States having,

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at the time of their adopting the Constitution, expressed a desire, in order to prevent misconstruction or abuse of its powers, that further declaratory and restrictive clauses should be added, and as extending the ground of public confidence in the Government will best insure the beneficent ends of its institution:

"Resolved, By the Senate and House of Representatives of the United States of America, in congress assembled, two-thirds of both Houses concurring, that the following articles be proposed to the Legislatures of the several States, as amendments to the Constitution of the United States; all or any of which articles, when ratified by three-fourths of the said Legislatures, to be valid to all intents and purposes, as part of the said Constitution, namely:"

THE TEN ORIGINAL AMENDMENTS

(They were declared in force December 15, 1791.)

ARTICLE I.

Religious Establishment Prohibited. Freedom of Speech, of the Press, and Right to Petition.

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

ARTICLE II.

Right to Keep and Bear Arms.

A well-regulated militia being necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III.

No Soldier to be Quartered in Any House, Unless, Etc.

No soldier shall, in time of peace, be quartered in any house without the consent of the owner, nor in time of war but in a manner to be prescribed by law.

ARTICLE IV.

Right of Search and Seizure Regulated.

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no war-

rants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V.

Provisions Concerning Prosecution, Trial and Punishment—Private Property Not to be Taken for Public Use, Without Compensation.

No person shall be held to answer for a capital or other infamous crime unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service, in time of war or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

ARTICLE VI.

Right to Speedy Trial, Witnesses, Etc.

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which districts shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defence.

ARTICLE VII.

Right of Trial by Jury

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any court of the United States than according to the rules of the common law.

ARTICLE VIII.

Excessive Bail or Fines and Cruel Punishments Prohibited.

Excessive bail shall not be required, nor excessive

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fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX.

Rule of Construction of Constitution.

The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X.

Rights of States Under Constitution.

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

The following amendment was proposed to the Legislatures of the several States by the Third Congress on the 5th of March, 1794, and was declared to have been ratified in a message from the President to Congress, dated Jan. 8, 1798.

ARTICLE XI.

Judicial Powers Construed.

The judicial power of the United States shall not be construed to extend to any suit in law or equity commenced or prosecuted against one of the United States, by citizens of another State, or by citizens or subjects of any foreign state.

The following amendment was proposed to the Legislatures of the several States by the Eighth Congress on the 12th of December, 1803, and was declared to have been ratified in a proclamation by the Secretary of State, dated September 25, 1804. It was ratified by all the States except Connecticut, Delaware, Massachusetts and New Hampshire.

ARTICLE XII.

Manner of Choosing President and Vice-President.

The electors shall meet in their respective States, and vote by ballot for President and Vice-President, one of whom at least shall not be an inhabitant of the same State with themselves; they shall name in their ballots the person voted for as President, and in dis-

tinct ballots the person voted for as Vice-President; and they shall make distinct lists of all persons voted for as President, and of all persons voted for as Vice-President, and of the number of votes for each, which list they shall sign and certify, and transmit, sealed, to the seat of the Government of the United States, directed to the President of the Senate; the President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted; the person having the greatest number of votes for President shall be the President, if such number be a majority of the whole number of electors appointed; and if no person have such majority, then from the persons having the highest numbers, not exceeding three, on the list of those voted for as President, the House of Representatives shall choose immediately, by ballot, the President. But in choosing the President, the votes shall be taken by States, the representation from each State having one vote; a quorum for this purpose shall consist of a member or members from two-thirds of the States, and a majority of all the States shall be necessary to a choice. And if the House of Representatives shall not choose a President, whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the Vice-President shall act as President, as in the case of the death or other constitutional disability of the President. The person having the greatest number of votes as Vice-President, shall be the Vice-President, if such number be a majority of the whole number of electors appointed, and if no person have a majority, then from the two highest numbers on the list the Senate shall choose the Vice-President; a quorum for the purpose shall consist of two-thirds of the whole number of Senators, and a majority of the whole number shall be necessary to a choice. But no person constitutionally ineligible to the office of President shall be eligible to that of Vice-President of the United States.

The following amendment was proposed to the Legislatures of the several States by the Thirty-eighth Congress on the 1st of February, 1865, and was declared to have been ratified in a proclamation by the Secretary of State, dated December 18, 1865. It was rejected by Delaware and Kentucky; was conditionally

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ratified by Alabama and Mississippi; and Texas took no action.

ARTICLE XIII.

Slavery Abolished.

1. Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

2. Congress shall have power to enforce this article by appropriate legislation.

The following, popularly known as the Reconstruction Amendment, was proposed to the Legislatures of the several States by the Thirty-ninth Congress on the 16th of June, 1866, and was declared to have been ratified in a proclamation by the Secretary of State, dated July 28, 1868. The amendment got the support of 23 Northern States; it was rejected by Delaware, Kentucky, Maryland, and 10 Southern States. California took no action. Subsequently it was ratified by the 10 Southern States.

ARTICLE XIV.

Citizenship Rights Not to Be Abridged.

1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

Apportionment of Representatives in Congress.

2. Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for President and Vice-President of the United States, Representatives in Congress, the executive and judicial officers of a State, or the members of the Legislature thereof, is denied to any of the male members of

such State, being of twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such State.

Power of Congress to Remove Disabilities of United States Officials for Rebellion.

3. No person shall be a Senator or Representative in Congress, or elector of President and Vice-President, or holding any office, civil or military, under the United States, or under any State, who, having previously taken an oath, as a member of Congress, or as an officer of the United States, or as a member of any State Legislature, or as an executive or judicial officer of any State, to support the Constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid and comfort to the enemies thereof. But Congress may, by a vote of two-thirds of each House, remove such disability.

What Public Debts Are Valid

4. The validity of the public debt of the United States, authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection and rebellion, shall not be questioned. But neither the United States nor any State shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations, and claims shall be held illegal and void.

5. The Congress shall have power to enforce by appropriate legislation the provisions of this article.

The following amendment was proposed to the Legislatures of the several States by the Fortieth Congress on the 27th of February, 1869, and was declared to have been ratified in a proclamation by the Secretary of State, dated March 30, 1870. It was not acted on by Tennessee; it was rejected by California, Delaware, Kentucky, Maryland, New Jersey, and Oregon; ratified by the remaining 30 States. New York rescinded its ratification January 5, 1870.

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ARTICLE XV.

Equal Rights for White and Colored Citizens.

1. The right of the citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.

2. The Congress shall have power to enforce the provisions of this article by appropriate legislation.

The following amendment was proposed to the Legislatures of the several States by the Sixty-first Congress on the 18th day of July, 1909, and was declared to have been ratified in a proclamation by the Secretary of State, dated February 25, 1913. The income tax amendment was ratified by all the States except Connecticut, Florida, Pennsylvania, Rhode Island, Utah, and Virginia.

ARTICLE XVI.

Income Taxes Authorized.

The Congress shall have power to lay and collect taxes on incomes, from whatever sources derived, without apportionment among the several States, and without regard to any census or enumeration.

The following amendment was proposed to the Legislatures of the several States by the Sixty-second Congress on the 16th day of May, 1912, and was declared to have been ratified in a proclamation by the Secretary of State, dated May 31, 1913. It got the vote of all the States except Alabama, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Rhode Island, South Carolina, Utah and Virginia.

ARTICLE XVII.

United States Senators to be Elected by Direct Popular Vote.

1. The Senate of the United States shall be composed of two Senators from each State, elected by the

people thereof, for six years; and each Senator shall have one vote. The electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State Legislatures.

Vacancies in Senatorships, When Governor May Fill by Appointment.

2. When vacancies happen in the representation of any State in the Senate, the executive authority of such State shall issue writs of election to fill such vacancies; Provided, That the Legislature of any State may empower the Executive thereof to make temporary appointment until the people fill the vacancies by election as the Legislature may direct.

3. This amendment shall not be so construed as to affect the election or term of any Senator chosen before it becomes valid as part of the Constitution.

ARTICLE XVIII.

Liquor Prohibition Amendment.

1. After one year from the ratification of this article the manufacture, sale, or transportation of intoxicating liquors within, the importation thereof into, or the exportation thereof from the United States and all territory subject to the jurisdiction thereof for beverage purposes is hereby prohibited.

2. The Congress and the several States shall have concurrent power to enforce this article by appropriate legislation.

3. This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the Legislatures of the several States, as provided in the Constitution, within seven years from the date of the submission hereof to the States by the Congress.

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CAUSES OF AIRCRAFT ACCIDENTS

Owing to the fact that the aeronautic field is new and complex, lawmakers and lawyers find it difficult to deal with the subject, especially in accident cases, which have so many aspects.

The following definitions of causes of aircraft accidents will, therefore, be a great help.

Causes of Accidents

There are two broad classes of causes of aircraft accidents, (1) those due to mechanical failures and, (2) those due to human failures.

In turn these may be divided into three classes, (1) accidents that take place in midair; and (2) accidents that take place on the ground or on the water, such as in starting, landing or "taxying" on the ground or water.

The Aero Club of America, the Aerial League of America, the Royal Aero Club of Great Britain, the Aero Club of France, and the Aero Club of Italy, have made close study of causes of aircraft accidents and have rendered valuable reports. The following report of the Royal Aero Club of Great Britain and memorandum submitted to the British Aerial Transport Committee by Captain B. C. Hucks, R.A.F., and the Assistant Secretary (Technical), as to accidents and accident investigation, with an annex summarising the work, prior to the war, of the public safety and accidents investigation committee of the Royal Aero Club and Aeronautical Society, are especially interesting.

Aeroplane accidents are, as a rule, due to one or other of the following causes, or sometimes to a combination of such causes:—

- A. Engine stoppage, etc.
- B. Errors in Piloting. 1—Want of experience and hurried teaching. 2—Real errors of judgment. 3—Rashness.
- C. Faulty construction. 1—Design. 2—Construction. 3—Materials.
- D. Dangerous manœuvres.
- E. Meteorological conditions.
- F. Fires.
- G. Illness of a pilot while in flight.

Before examining very briefly some of the accidents due to one or other of these causes, or a combination of any of them, it should be noted that, with pilots who are fully experienced and know their engines, grounds, winds and weather signs, accidents under the peace conditions of flying should become rare.

A. Engine Stoppage, etc.

The stoppage of an engine in the air should not, under favourable circumstances, imply any serious risk of accident. His mechanical power gone, the flyer must necessarily descend. He can and must maintain the forward speed of his machine and the support of its planes, by gliding downward in a gradually descending path; but if he is over thickly-wooded, broken, or mountainous country, it may be difficult for him

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to find a suitable landing point, and he may, should he make his contact with bad ground, break some portion of his alighting gear, or perhaps damage his machine more seriously. But if he is dexterous he may, and usually does, save himself and his passengers from serious injury.

To many flyers the sudden stoppage of their engine is disconcerting, leading them to errors of judgment they would not be guilty of under normal conditions. So it may happen that at a moment when exceptional judgment is demanded of him, a flyer is not in a condition to act correctly and with unswerving precision.

When his engine has failed a flyer's first thought, naturally, is to make a descent at some point where the ground is suitable, and where he will avoid damaging his machine, or injuring himself or his passengers. If he is near an aerodrome he will endeavour to reach this aerodrome. It has in the past happened not infrequently that an engine has failed—say through some disorganisation in the petrol pressure feed as a result of "taxying" a machine prior to a flight—not long after a machine has left the ground and before it has gained altitude. The instinct of the flyer under such conditions is to endeavour to turn his machine in the air and glide back to the aerodrome rather than make a landing in any field or open space which may lie within reach. But while in the act of turning—remembering that he has been more or less disconcerted by the sudden failure of his motor, and remembering also that owing to the rapid growth of the art of flying thoroughly experienced pilots are few—he may make the mistake of gliding at so flat an angle while on the turn that the air pressure under the inner wing of

his machine falls so low that it is insufficient for the support of that side of the machine; whereupon the aeroplane begins a side-slip which may turn into a spinning nose-dive—and this means that, for the moment at any rate, the craft has passed beyond the flier's control. If, however, he is at a sufficient altitude when this happens, he may be able to extricate the aeroplane from its spinning dive; but should he be near the ground when his machine side-slips he will probably be unable to regain control before it crashes.*

It would be safer in some cases after an engine has failed, and particularly when failure takes place with the aeroplane at a low altitude, if flyers glided on straight ahead and did not endeavour to turn. This might, it is true, involve a descent on unsuitable ground, with some slight damage, perhaps, to the under-carriage, but this would be far better than losing control altogether. A fact to be remembered is that if an aeroplane loses flying speed while moving straight ahead it not only loses height less rapidly, but there is far less risk of a side-slip, as all stable machines tend, when the flying speed

* Note by Major G. I. Taylor.

"Many accidents occur when an engine stops shortly after a machine has left the ground, and before it has attained a height of more than a few hundred feet. Under these circumstances, if the readings of the instruments are used intelligently, it is frequently possible to turn back into the aerodrome; but what often happens is that the pilot, instead of looking at the instruments, looks only at the ground. Under these circumstances, after he has turned across the wind, the ground may appear to him—if the turn has been correctly banked—to be moving sideways under him, and in the direction it would appear to move if he were doing a very much over-banked turn at a greater height above the ground. The pilot's instinct is therefore to hold the lower wing up, and to make an under-banked turn. The number of accidents due to faulty piloting, on the part of inexperienced pilots during a turn near the ground, might be greatly reduced by better education, and also by a greater confidence in the instruments, which are now extremely reliable."

is reduced below a certain point, to take up automatically a safe gliding angle.

Probably the origin of the majority of accidents at the present time is stoppage of the engine, after which a flyer is frequently guilty of some error of judgment, or of piloting, or of both; and such errors are due in most cases to the anxiety of the flyer to reach some specific landing ground—an anxiety which will be all the more acute should engine failure have occurred when the machine is low.

This points to the fact that when airways are established, with landing grounds fairly close together along each route, the main cause of accidents will have been removed. Under such improved conditions, should an engine fail while an aeroplane is in flight, an aviator will not find it necessary to turn and manœuvre in the air, during a glide without motive power, in order to reach some landing ground that is not readily accessible. Subject to his being at a sufficient altitude, he will be able to glide to which ever alighting place on the chain of grounds may lie before him, and make a landing under favourable conditions on a sufficiently smooth ground.

Even with such landing places available, an engine may fail so soon after a pilot has left the ground that he is unable to reach the next alighting point, though this may be only a few miles distant. Under such conditions, assuming he has insufficient altitude at which to make a safe turn, he should glide down in the open country and pick the best landing he can. It is worth while, therefore, to bear this contingency in mind, and to see that the land is fairly open in the immediate vicinity of aerodromes.

Improved reliability of engines, and the rapid

growth of skill, experience, and a sense of responsibility in ground men and mechanics, should render improbable cases of engine failure occurring almost directly after an aeroplane has left the ground; while the careful training of flyers should prevent them from falling into the error of starting away on a flight with a motor that is not running well.

B. Errors in Piloting.

Errors in piloting, so far as one can isolate them as a cause of accident, are not likely to involve a flyer in much danger so long as he is at a sufficient altitude. Peace flying will also remove the necessity from all civil flyers of making those extreme manœuvres which are called for in war in darting from or at an enemy, or spinning down to get out of his reach, so that all errors connected with practising these evolutions will be absent.

The comparative leisure of peace flying should tend also to prevent accidents due to hurried teaching, or to errors of judgment on the part of instructors in ordering pupils to make flights or carry out manœuvres for which their degree of proficiency has not prepared them. Rashness on the part of young flyers, and the taking of unnecessary risks, should also be discouraged more effectually when a longer period can be allowed for tuition, and when there are not the exigencies of war to justify such risks.

Errors in piloting, when an aviator is making his contact with the ground after a flight account for a large number of accidents, though these, generally speaking, are not attended by serious consequences. A broken under-carriage is, as a rule, the worst that happens, and though ex-

perience shows that an aeroplane may overturn occasionally and be damaged badly, its occupants generally escape. Landing with the wind instead of against it will often lead to a machine being damaged by collision through a pilot failing to bring it to a standstill within the length of run he normally expects.

Another error of piloting when in the act of descending is to alight side to wind. In this case, if the aeroplane has a sideway as well as a forward motion at the moment of contact with the ground the running wheels may buckle, and the breakage of the entire chassis, and perhaps the overturning of the machine, may result.

Such accidents in landing are not always to be laid to the door of the flyer. It may happen, through the absence of any wind-vane or smoke, which gives him a reliable indication, that he is unable to judge accurately the direction of the ground wind.

When chains of aerodromes are in existence it will be easy and inexpensive to place on each, in a position where it is seen easily by a pilot while descending, some standard type of wind-direction indicator.

C. Faulty Construction.

Accidents due to faulty construction are becoming far less frequent owing to the increasing knowledge and skill of designers and constructors, the adoption of ample factors of strength, and the care which is exercised in the choice and inspection of materials employed. At present, however, greatly though design and construction have improved, it is possible for a machine in the course of the violent manœuvres dictated by war service, to be subjected to such abnormal

strains that some part of it collapses and robs the pilot of control.

Another risk of structural breakage which must be reckoned with is that of a rough landing having done some damage to a machine—say to the rear of the fuselage. This, if it escapes detection at the time, may lead afterwards, when a machine is subjected to strain, to a collapse in flight.

Constructional risks may be encountered, even in future, by flyers who are called upon to handle machines of an experimental type, the behaviour of which, when actually in flight, is being determined by practical tests. These risks affect only indirectly the general public or potential passengers, who would not be introduced till long after such risks had been studied and eliminated.

D. Dangerous Manœuvres.

There should be a distinction, of course, between dangerous manœuvres which are unnecessary and those which are called for in learning, and in afterwards performing, the abrupt and often violent evolutions which must be made in aerial fighting. The risks attached to the latter are inevitable while we are at war; but in commercial or pleasure flying, when only safe and reasonable piloting will be required, accidents under this heading should become extremely rare. In the Air Force naturally, even under peace conditions, dangerous manœuvres must be carried out on occasion; but there will be no justification for them in civil flying.

E. Meteorological Conditions.

Certain accidents have, it seems probable,

been due to abnormal atmospheric conditions, or at least to the discomfiture of the pilot by such conditions; and data in this regard—though a certain amount of information is already available—need to be far more extensive. We refer to this question, briefly, under a later heading.

F. Fires.

This cause of accident, occurring when a machine is in flight, or when it has crashed after a bad landing, is now receiving the closest attention, and, under the less arduous conditions of peace flying, and with the experience and data already obtained, it should become possible very greatly to minimise this danger.

G. Illness of a Pilot.

In the Annex to the Appendix, a case is mentioned of an accident which was assumed to be due to the indisposition of the flyer, and there have been other obscure cases which have been attributed to the same cause. In war flying, under the strain of ascending rapidly to high altitudes, in diving steeply, or in spiralling or other violent movements, cases are to be expected of giddiness, or of temporary loss of consciousness. In peace flying there should, ordinarily, be none of these extreme physical strains; and medical examinations, carried out periodically, should obviate the risk of a commercial pilot, while in charge say of a passenger craft, losing control of his machine through any sudden attack of illness.

Summary of the work, prior to the war, of the Public Safety and Accidents Investigation Committee of the Royal Aero Club and Aeronautical Society.

In 1912 the Royal Aero Club, jointly with the Aeronautical Society, appointed a Special Committee known as the Public Safety and Accidents Investigation Committee, to obtain reports as to aeroplane accidents, and to endeavor to discover the causes of such accidents, and to express an opinion, whenever possible, as to how they might be avoided in future. Official representatives were appointed on the principal aerodromes, whose duty it was, should an accident occur, to gain all information possible concerning it, to examine the wrecked machine, and to bring before the Committee all the information which could be secured.

Between 1912 and 1914—when the outbreak of war interrupted the work of the Committee—twenty-six fatalities had been investigated.

The main causes of accidents before the war, as shown by an examination of the Committee's reports, were:—

1. Errors of judgment on the part of a flyer.
2. The structural breakage of some part of an aeroplane while in flight.

Nine of the twenty-six fatalities were due to errors of judgment.

In two cases accidents were shown to be due to a pilot attempting a flight in a machine which was out of adjustment, with the result that it side-slipped while turning.

In two others, pilots dived their machines so suddenly and steeply that they were jerked forward onto their controls, accentuating the descent to such a degree that they fell from their machines while in the air.

In two more cases, the accident was caused by a machine nose-flying, while gliding, through the pilot allowing it to lose flying speed.

The remaining three cases may be summarised as follows:

(i) A pilot was making a series of spectacular evolutions, low down over an aerodrome, when his machine side-slipped.

(ii) A pilot overbanked while turning at a low altitude, and this was followed by a nose-dive.

(iii) A pilot dived steeply, then flattened out too suddenly, fracturing a wing.

Of accidents due primarily to engine failure, or engine trouble, the Committee investigated three—though it should be noted that, in each case, and subsequent to the trouble with his engine, the flyer was guilty of some error of judgment. These cases are summarised herewith:—

(i) A pilot's engine was observed to stop when he was at an altitude of about 200 feet. Shortly afterwards the machine nose-dived. In the Committee's opinion, the accident was due to the aviator failing to appreciate the danger of keeping his craft in a horizontal position after the engine had stopped, thereby losing flying speed.

(ii) A pilot, finding his engine running badly after leaving an aerodrome, turned in the air in order to fly back to his starting point; but in making the turn he lost speed and altitude to a dangerous extent, and while passing low, near a belt of trees, which may have set up disturbed air in the neighbourhood of his machine, the craft was seen to dive.

(iii) A pilot attempted a flight with an engine that was not working properly, with the result that the machine gradually lost altitude until it fell into a river.

Eight of the twenty-six accidents investigated

were shown to be due to the breakage of some part of a machine. These may be summarised as follows:—

(i) A quick-release device of a wing-cable opened and the cable came adrift, flapping up and piercing the fabric of a wing, which then burst and allowed the machine to fall.

(ii) An aircraft collapsed in flight through the breakage of the wires supporting a wing, following upon some derangement of the cabane, this derangement being due either to a portion of the revolving engine fouling the engine cowl, or by a partial failure or breakage of the propeller, which threw the rotating system out of balance, and set up stresses which caused the engine to shift.

(iii) The wings of an aircraft collapsed while the machine was flying in an extremely high wind.

(iv) An elevating plane broke and allowed a machine to dive so steeply that the main planes collapsed.

(v) A wing broke as the result of a faulty repair to a main-spar.

(vi) A wing failed, owing to want of sufficient strength to withstand the stresses produced either by a violent wind or sudden warping.

(vii) An aircraft collapsed while in flight owing to inherent structural weakness.

(viii) A rudder became detached from a machine in flight owing (in the opinion of the Committee) to its being insufficiently strong to resist a sudden and abnormal strain, and owing also to the fact that it had probably been strained in a previous flight.

In connection with accidents due to structural

weakness, the Committee made two recommendations. One was that, as aircraft are built of perishable materials, all machines which have been in existence for some time should undergo a critical examination, both as regards framework and fabric.

The second recommendation was that all repairs to a machine must be carried out under expert and responsible supervision. As to the remaining six accidents, making up the total of twenty-six; their causes are summarised below:—

(i) The pilot of an experimental machine lost control in a gusty wind.

(ii) A pilot ascended while in an unfit state of health, and apparently lost consciousness while his machine was gliding.

(iii) A pilot lost control through his foot slipping on the rudder-bar.

(iv) A pilot who was giving a public demonstration on an aerodrome of insufficient size turned sharply to avoid endangering spectators, with the result that his machine side-slipped from a low altitude.

(v) A pupil, flying with an instructor in a dual-control machine, appeared to resist for some unknown reason the ruddering action of the latter, with the result that the machine became uncontrollable.

(vi) A pilot who was landing, and whose view was obstructed to some extent by his radiator, ran into some people who had encroached on the flying ground, with the result that one person was killed and several injured. The Committee found it necessary, in its en-

deavour to determine the causes of accidents, to request local authorities, in cases where aircraft fell in open country, to prevent the wreckage of the machine being moved until it had been examined by experts, and this will assuredly have to be carried out after the war.

Final Note

Looking at pre-war accidents in the light of conditions such as will exist, probably, when peace comes, one very appreciable element of risk, that of structural collapse, should be eliminated almost entirely.

This being so, we find that what we shall have left, as a main risk of accident, will be engine failure, followed perhaps by an error of judgment on the part of the flyer. To lessen this risk we must, of course, perfect our aero-engines, and eliminate by degrees those small causes of stoppage, or of trouble, which (insignificant in themselves) may lead none the less to a serious accident.

It should be noted again that, when an aviator who encounters engine trouble has a chain of alighting grounds along his flying route, he will be far less likely to find himself in a critical position; also, that, when we have the comparative leisure of peace in which to train flyers more carefully, and also more scientifically, they should be less likely to be guilty of errors of judgment.

B. C. HUCKS, Captain, R.F.C.

HARRY HARPER.

December, 1917.

Notes

MILITARY AERIAL LAWS

Practically all the aerial laws enacted so far have been enacted for military reasons.

The balloon, which was the first successful type of aircraft, proved its military value during the battle of Fleurus, on June 26, 1794, when Dr. Cautelle, piloting the balloon "L'Interprenant," contributed greatly to the victory by informing Jourdan of the enemy's movements. In 1795 the Committee on Public Safety authorized the organization of two balloon companies and a balloon school at Mendon and a balloon factory at Petit-Mendon, in charge of Dr. Cautelle and Coutè.

On September 3, 1796, a French balloon fell in the hands of the Austrians at the battle of Wuztburg, and in 1798 the equipment of the French balloon company, which had been brought to Egypt, fell into the hands of the English at Aboukir. A short time afterward Napoleon suppressed the balloon service.

In 1859, Goddard was placed in charge of French war balloons used in the campaign against Italy.

In 1861, Professor T. S. C. Lowe, the pioneer American balloonist, went to Washington and on June 5 offered his services to the Federal Government, and the use of his balloon. On June 21 he received an order from Captain A. W. Whipple, of the topographical engineers, to report at Arlington with his balloon. On July 21 he was notified that he was to have charge of the balloon. On July 24 he made a

scouting trip over the Confederate lines and was taken back across the Potomac by an east wind. As he had no flag to show, he was fired on by the Federal forces. He ascended higher and landed $2\frac{1}{2}$ miles outside of the Federal picket line.

On August 2d Professor Lowe was authorized to have another balloon constructed. It had 25,000 cubic feet gas capacity, was completed by August 28, and was in service by August 30. With it Professor Lowe discovered the Confederate batteries on Munson Hill and Clark's Hill.

In October of that year the Secretary of War authorized Professor Lowe to have four more balloons made, which were named: "Constitution," "Washington," "Union, and "Intrepid."

In 1861 John La Mountain, balloonist attached to General Benjamin F. Butler, of the Federal Forces, made an ascension on August 10 with his balloon "The Atlantic," from Fortress Monroe, ascending to a height of 3,500 feet, drifting over Hampton, Newport News, Norfolk, returning to Fortress Monroe with a diagram of the Confederate camps in the vicinity.

In 1862 General A. E. Burnside, of the Federal Forces, used a captive balloon to follow the movements of the enemy. On December 13, during the battle of Fredericksburg, the balloon was stationed directly over the general's headquarters.

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On March 14, to April 10, 1862, Captain Steiner's balloon, "The Eagle," was used by Commander A. H. Foote's forces during the attack on Island No. 10, in the Mississippi River.

In May, 1863, the two Federal balloons, "The Eagle" and "Washington," were with the army of the Potomac, during the battle of Chancellorsville.

Captain Cyrus B. Comstock, Corps of Engineers, of New York, who later became a general, was assigned by General Hooker, on April 7, 1863, to take command of the balloon section of which Professor Lowe was in charge.

The Federal balloon section had six silk balloons with full equipment and portable gas generating plants.

The following balloonists were employed by the Federal balloon section: Professor T. S. C. Lowe and his father, Clovis Lowe, James Allen, E. S. Allen, Captain E. Seaver, J. B. Starkweather, John O'Donnell, William Paulding and John La Mountain.

The Confederates only had one balloonist, Captain John Randolph Bryan, with General J. B. Magruder, and a cotton balloon.

When Air Scouts Were Considered as Spies

Article 99 of the "Instructions" issued by the Government during the Civil War provided that the circumstances surrounding the capture would determine the disposition to be made of non-military messengers, without uniform.

During the Franco-Prussian War, between September 23, 1870, and January, 1871, there were sent up from Paris 66 balloons, ranging

between 1200 and 2000 cubic meters gas capacity, carrying from one to four passengers each besides the pilot, carrier pigeons and mail. Only five of these balloons were captured. The others succeeded in escaping the German troops besieging Paris.

Following the success of the French balloons, Bismarck announced that the persons on board of captured balloons would be considered as spies, "*Comme ceux qui feraient des tentatives semblables par la voie ordinaire.*"

This doctrine did not last. It was evident that the balloon was the equivalent of a ship and its purpose could not be disguised.

It was the German Representative, General von Voigt Rhetz, who, at the meeting of the Brussels Conference, August 7th, 1874, proposed a resolution removing airmen from the status of spies. This principle was confirmed at the meeting of the Institute of International Law at Oxford in 1880, by the resolution which was included in the manual of military law. It was confirmed officially at the first Hague Conference, in 1889.

On February 10, 1914, Hans Berliner, the German balloonist, with two passengers, landed at Kirginschauk, in the Ural Mountains, after a journey of 1863 miles from Bitterfeld, Germany. They were imprisoned by the Russian police for over thirty-five days on suspicions of espionage.

After the world war started the Russian Government announced that it would treat as pirates the aviators who bombed unfortified towns.

At different times during the war the German Government threatened to treat as spies

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Allied aviators dropping propaganda leaflets in the German lines. When sentence was passed on the British aviators, Captain Scholtz and Lieutenant Wookey, in March, 1918, the

British Government advised the German Government, through the Dutch Minister in Berlin, that if the sentence was put into effect, reprisals would be taken.

Notes



EVOLUTION OF THE AERIAL WAR CODE

The laws of war have changed and their provisions modified in the interest of humanity in accordance with the progress of civilization.

The Declaration of St. Petersburg, of 1868, which was a forerunner of the Hague Convention, declared that war is a contest between armies rather than people and the only legitimate object of war is to weaken the military forces of the enemy.

A nation's war-law manual, which contains the instructions for the guidance of armies in the field, is the code which the military man is to follow when engaged in hostilities and dealings with the enemy. It defines the rights and duties of armed forces usually as agreed upon by the nations. The United States War Manual provides that only such measures may be adopted against the enemy as "are lawful according to modern laws and customs of war."

When the first Hague Convention was held, in 1899, balloons had been used for military purposes for over one century and all the nations had balloon corps.

The possibility of using balloons for bombing was clear to some and others saw great possibilities in the experiments with dirigibles and aeroplanes of Alberto Santos-Dumont, Tissandier, Henri Juillot, Count Zeppelin, Clement Ader, Hiram Maxim, Samuel P. Langley, and other pioneers.

The Hague Conference of 1899, by a vote of 22 to 4, adopted a declaration reading as follows:

"The contracting Powers agree to prohibit, for a period extending to the close of the Third Peace Conference, the discharge of projectiles and explosives from balloons or by other new methods of a similar nature. The present declaration is only binding on the contracting Powers in case of war between two or more of them. It shall cease to be binding from the time when, in a war between the contracting Powers, one of the belligerents is joined by a non-contracting Power."

Two rules of international law governing bombardment were adopted at the Second Hague Conference of 1907. Article 27 of the Hague regulations on Land Warfare reads:

"The attack or bombardment, by any means whatever, of towns, villages, dwellings, or buildings which are undefended, is prohibited."

Article 1 of The Hague Convention respecting Naval Bombardment reads:

"The bombardment by naval forces of undefended ports, towns, villages, dwellings, or buildings, is forbidden."

At the London Conference of 1910 it was proposed that the nations represented adopt the doctrine of freedom of the air, the majority of the representatives holding that the sovereignty of the State should be asserted only up to some prescribed level of altitude, above which the flight of aircraft would still be practicable, and that above that altitude the air should be free to all, just as the high seas outside the three mile

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limit are free to all. This proposal was opposed by the British representatives, who pointed out that to give to foreign aircraft, as a matter of acknowledged international law, the right to fly at will over the territory of the State would be to give them undesirable opportunities for espionage, and generally limit the "elementary right of a State to take each and every measure which it considers necessary for self-preservation." In time of war, moreover, the doctrine of "freedom of the air" above a certain altitude would give rise to most embarrassing questions for neutral States. They would actually be

exposed to the risk of having aerial battles fought over their territory without being able to claim that their neutrality had been infringed. The case of the upper air presents no true analogy to the case of the high seas outside the limits of its territorial waters.

The one important step in the progress of international aerial regulations was the agreement of 1913 between France and Germany under which the aircraft of either country could fly over the other country and make landings, under certain rules and restrictions. This agreement is reproduced in a preceding chapter.

Notes

CREATION OF FORBIDDEN ZONES

The British and French Aerial Navigation Acts of 1911 provided only for the regulation of aerial navigation within those States. Russia was the first nation to establish forbidden zones.

Russia's Forbidden Zones

The Russian Aerial Navigation Act of July 5, 1912, prohibited aircraft from passing of the region located between the $59^{\circ}10'$ and $60^{\circ}10'$ degrees latitude, north; and between the 23d and 25th degrees longitude, east of Greenwich.

Austria's Forbidden Zones

Austria followed the example adopting the forbidden zones shown in the map reproduced herewith. The law was adopted December 20, 1912; the forbidden zones were announced January 20, 1913.

Germany, Great Britain and France followed by creating the forbidden zones shown on the maps reproduced herewith. The British Act creating the forbidden zones, which was dated March 1st, 1913, is reproduced herewith.

British Aerial Navigation Act Creating Forbidden Zones

In pursuance of the powers conferred on me by the Aerial Navigation Acts, 1911 and 1913, I hereby make, for the purposes of the safety and defence of the Realm, the following Orders:—

I. *Prohibited Areas.*—I prohibit the navigation of aircraft of every class and description over the areas described in Schedule I to these Orders (hereinafter referred to as "Prohibited Areas").

II. *Portions of the Coastline Prohibited to Aircraft from Abroad.*—I prohibit the navigation of aircraft coming from any place outside the United Kingdom over the whole of the coastline of the United Kingdom and the territorial waters adjacent thereto, except such portions of the coastline with the territorial waters adjacent thereto as are described in Schedule II to these Orders.

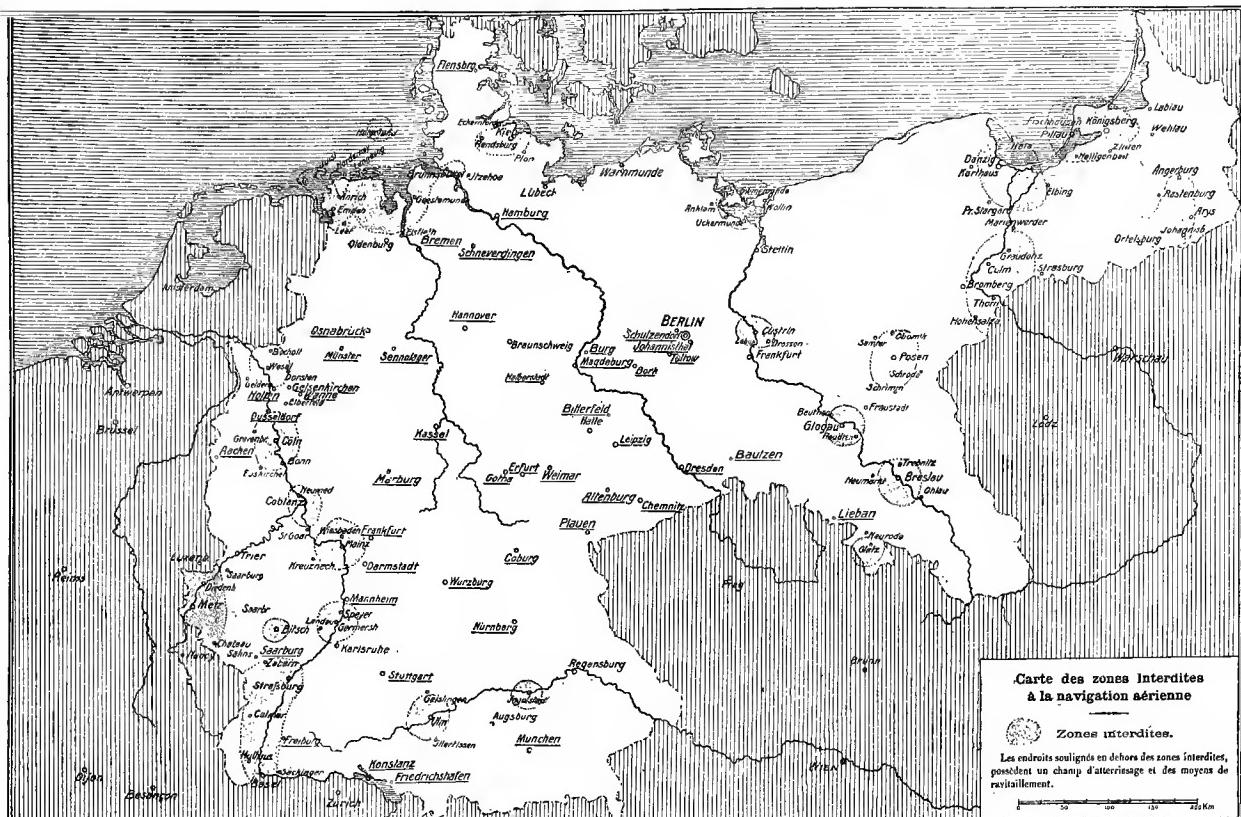
III. *Landing areas for Aircraft from Abroad.*—I prescribe the areas mentioned in Schedule III to these Orders (hereinafter referred to as "Prescribed landing areas") to be the areas within which aircraft coming from any place outside the United Kingdom shall land; and I prohibit the navigation of such aircraft over any other part of the United Kingdom until after they have landed in one of the said landing areas and have complied with the conditions hereinafter set forth.

AIRCRAFT FROM ABROAD

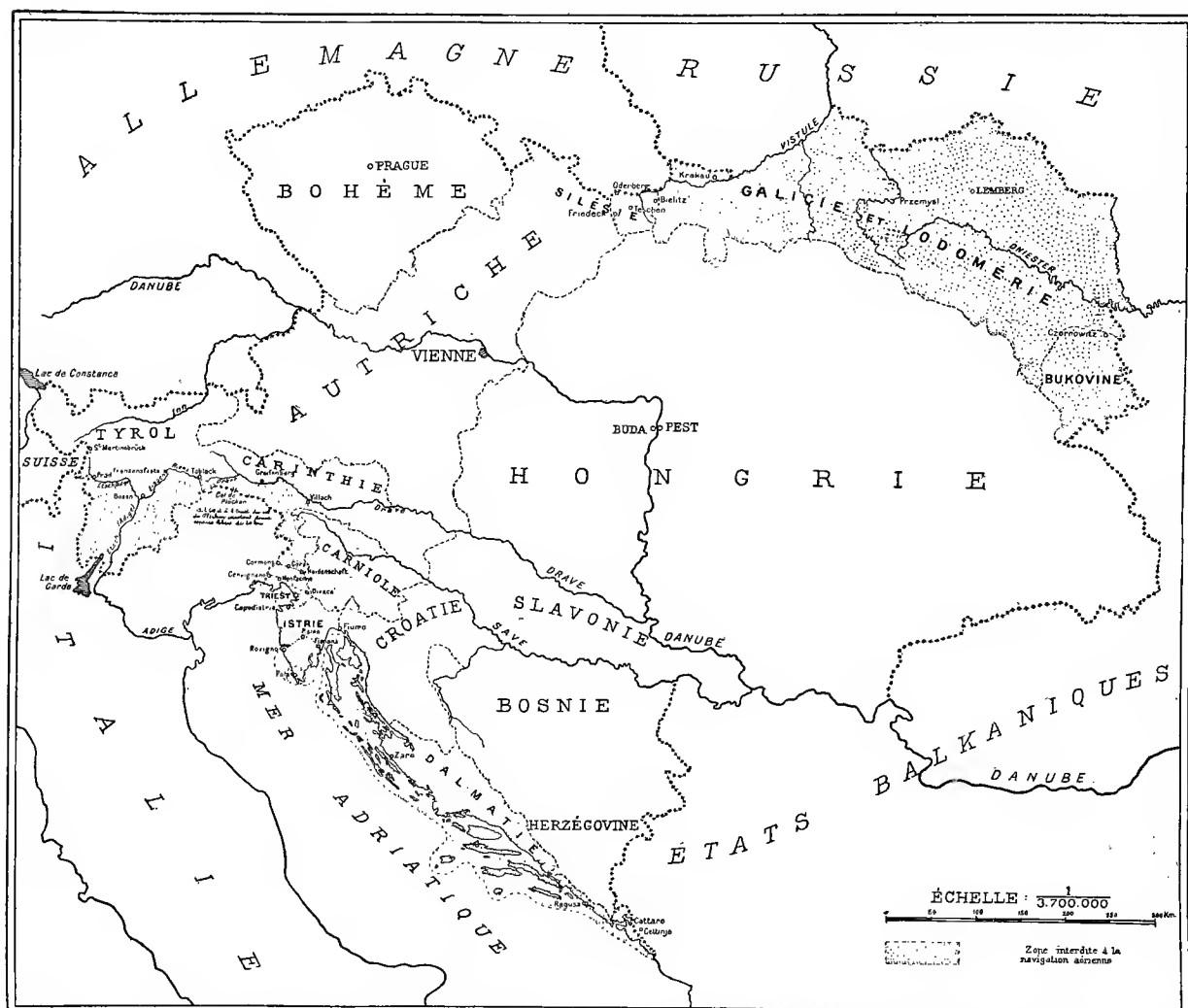
IV. *The Conditions Imposed on Aircraft from Abroad.*—I prescribe the following conditions to be complied with by aircraft coming from any place outside the United Kingdom:—

The person in charge of an airship, before

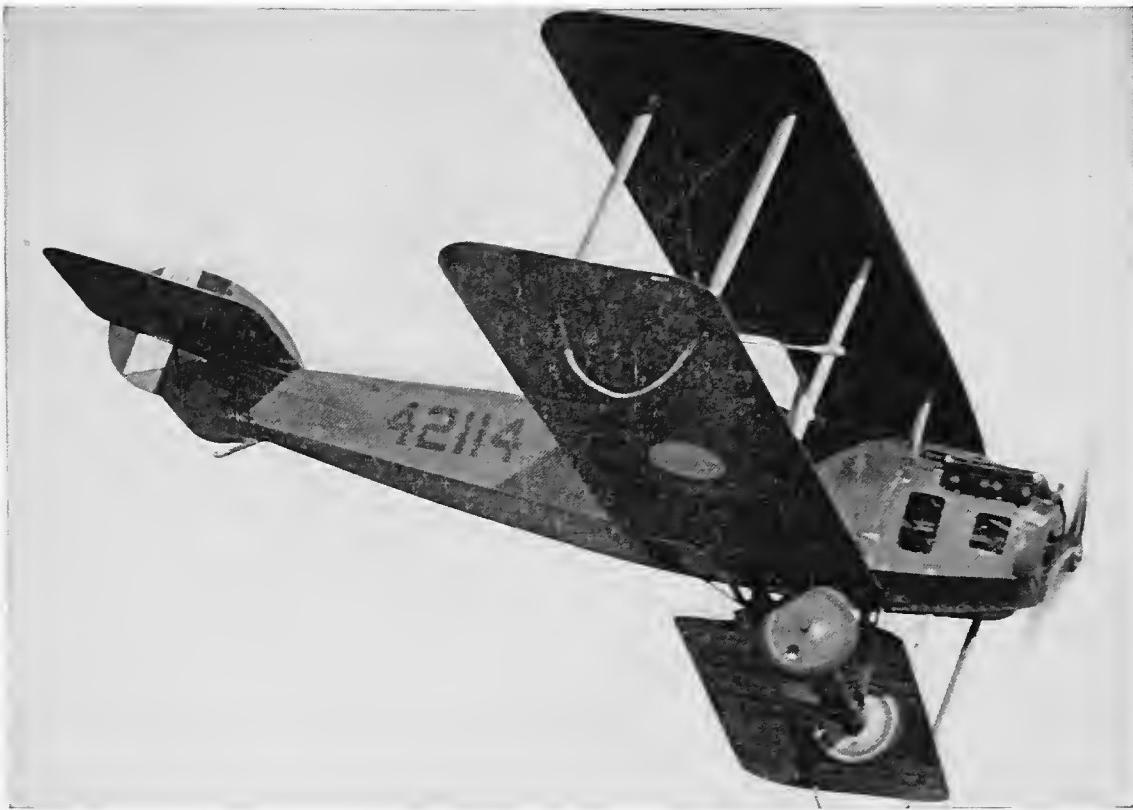
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Map of Germany with shaded portions representing the zones forbidden to aerial navigation in 1914. Prepared by the French Institut Cartographique Militaire.



Map of Austria-Hungary with shaded portions representing the zones forbidden to aerial navigation in 1914. Prepared by the French Institut Cartographique Militaire.



Photograph showing how an innocent looking aerial touring or passenger carrying aeroplane can photograph military positions. The square hole at the bottom of the fuselage, just back of the chassis, is made especially to accommodate a camera and photograph the ground below. Hence the necessity of forbidding the carrying of cameras to aeroplanes operating near or over important military positions, excepting by special permission or subject to inspection.



Aerial photograph of New York City, showing the wide area covered by a snapshot taken from an aeroplane.

commencing a voyage to the United Kingdom, shall apply for a clearance to a duly authorised British Consular officer in the country from which the voyage is to be commenced, and he shall not enter the United Kingdom until at least 48 hours after such consular officer has issued the clearance to him.

In the application (of which three copies must be supplied) he shall state accurately the following particulars:—

Name and registered number (if any) of airship.

Type of airship.

Name, nationality, and place of residence of the owner, of the person in charge, and of every member of the crew, and name, profession, nationality, and place of residence of every passenger (if any).

Nature of cargo (if any).

Approximate time of departure.

Place of departure.

The intended landing place in the United Kingdom (which must be within one of the prescribed landing areas).

Proposed destination.

Object of voyage.

No change shall be made in the arrangements stated in the application unless either notice has been given to the Consular officer before the clearance is issued or his consent in writing is afterwards obtained.

A person in charge of an aeroplane shall, before commencing a voyage to the United Kingdom, send notice to the Home Office stating the proposed landing-place, which must be within one of the prescribed landing-areas; the approximate time of arrival, and his own name and

nationality; the notice, which may be sent by letter or telegram, must be despatched so as to reach the Home Office at least eighteen hours before he enters the United Kingdom; no person in any aircraft on entering the United Kingdom shall carry or allow to be carried in the aircraft any goods, the importation of which is prohibited by the law relating to Customs, any goods chargeable upon importation into the United Kingdom with any duty of Customs, except such small quantities as have been placed on board at the place of departure as being necessary for the use during the voyage of persons conveyed therein, any photographic apparatus, carrier or homing pigeons, explosives or firearms, any mails.

The person in charge of any aircraft shall, on landing, report personally to the authorised officer, and in the case of an airship present the clearance to him; fill in and hand to the authorised officer an arrival report in a form prescribed. The person in charge of the aircraft shall not continue his voyage until he has obtained a permit from the authorised officer, for which a fee of £3 will be payable in case of an airship and £1 in case of an aeroplane. He shall in his subsequent voyage, unless exempted by the terms of the permit, comply with the following conditions:—

In the case of an airship, at least one British representative, approved by the authorised officer, shall be carried in the aircraft. No photographic or wireless apparatus, carrier or homing pigeons, explosives or firearms shall be carried. No mails shall be carried. The journey shall be effected within the time and by the route specified in the permit. The pilot shall carry

his certificate and shall produce it when required. The aircraft, before quitting the United Kingdom, shall descend in one of the prescribed landing areas and report to the authorised officer. If any of the terms of the permit cannot be fulfilled, owing to accident, stress of weather, or other unavoidable cause, the aircraft shall come to ground at the earliest opportunity, and the person in charge shall forthwith report by telegram to the Home Office. No exemption from these conditions shall be given except with the previous authority of the Home Office.

The term "authorised officer" means an officer appointed by a Secretary of State for the purposes of this Order. Except where the authorised officer is specified in the clearance, the person in charge of the aircraft must ascertain by telegraphing to the Home Office, or otherwise, the name and address of the officer to whom he should report.

NAVAL AND MILITARY AIRCRAFT

V. Foreign Naval and Military Aircraft.—Foreign Naval or military aircraft shall not pass over or land within any part of the United Kingdom, or the territorial waters thereof, except on the express invitation, or with the express permission previously obtained, of His Majesty's Government. Such aircraft shall enjoy such exemptions from the foregoing orders, and be subject to such special conditions, as may be specified in the invitation or permission.

VI. British Naval and Military Aircraft.—The foregoing orders shall not apply to naval or military aircraft belonging to or employed in the service of His Majesty.

VII. British Aircraft Returning to the

United Kingdom—The conditions prescribed by the foregoing Order No. 4 to be complied with by aircraft coming from places outside the United Kingdom shall not apply to an aircraft which commenced its voyage from and is returning to the United Kingdom provided:—

The owner, the person in charge, and crew are British subjects;

Notice is given to the Home Office before or immediately after the outward voyage is made;

The return voyage is made within 30 days of the departure from the United Kingdom;

At least 18 hours' notice of the return voyage is given to the Home Office, stating the intended landing place (which must be in one of the prescribed landing areas), and the approximate time of arrival.

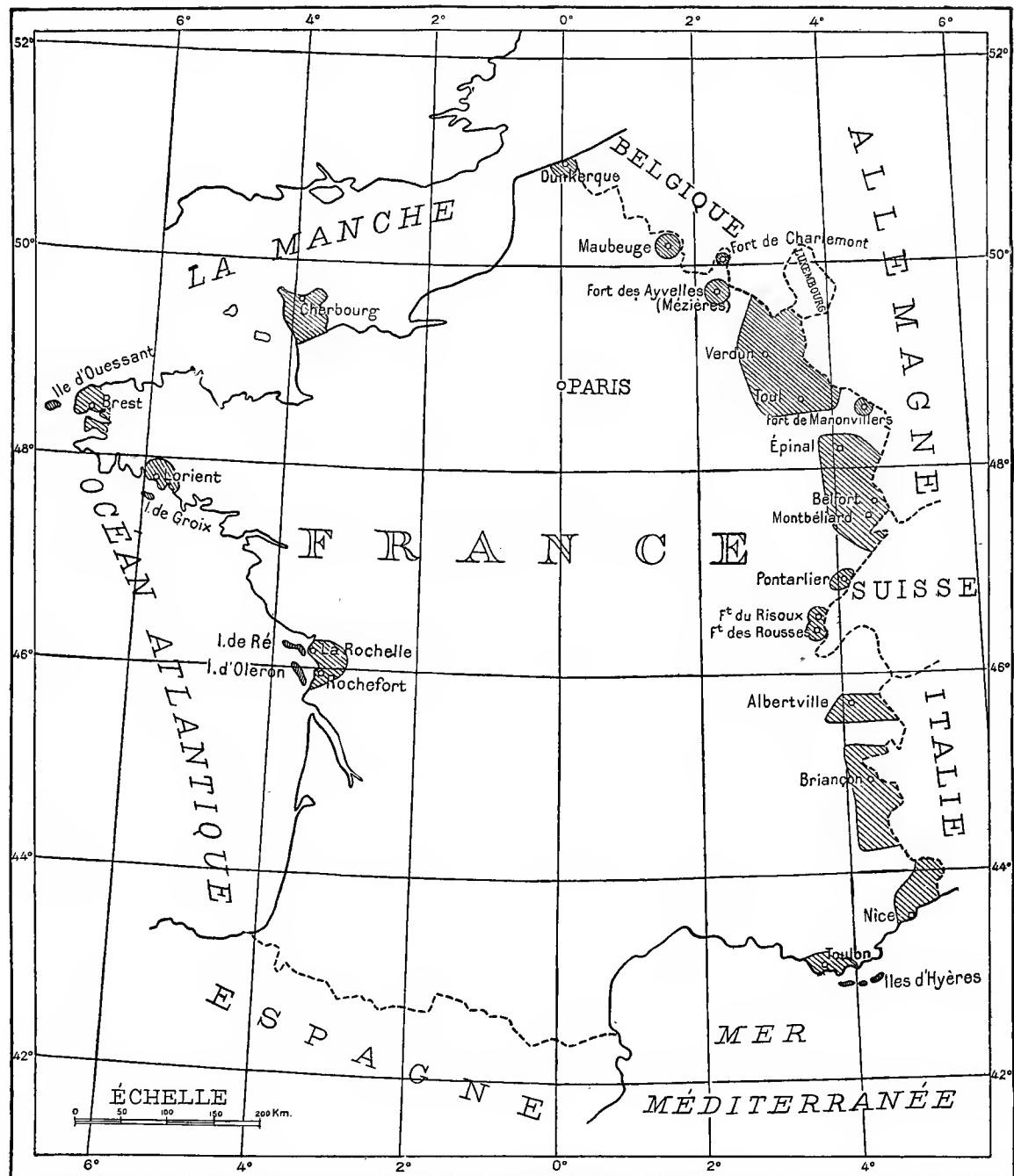
EXEMPTIONS

VIII. Exemptions.—The Secretary of State may for special reasons grant exemption from any or all of the foregoing orders to persons recommended for such exemptions by the Admiralty, War Office, or other public departments.

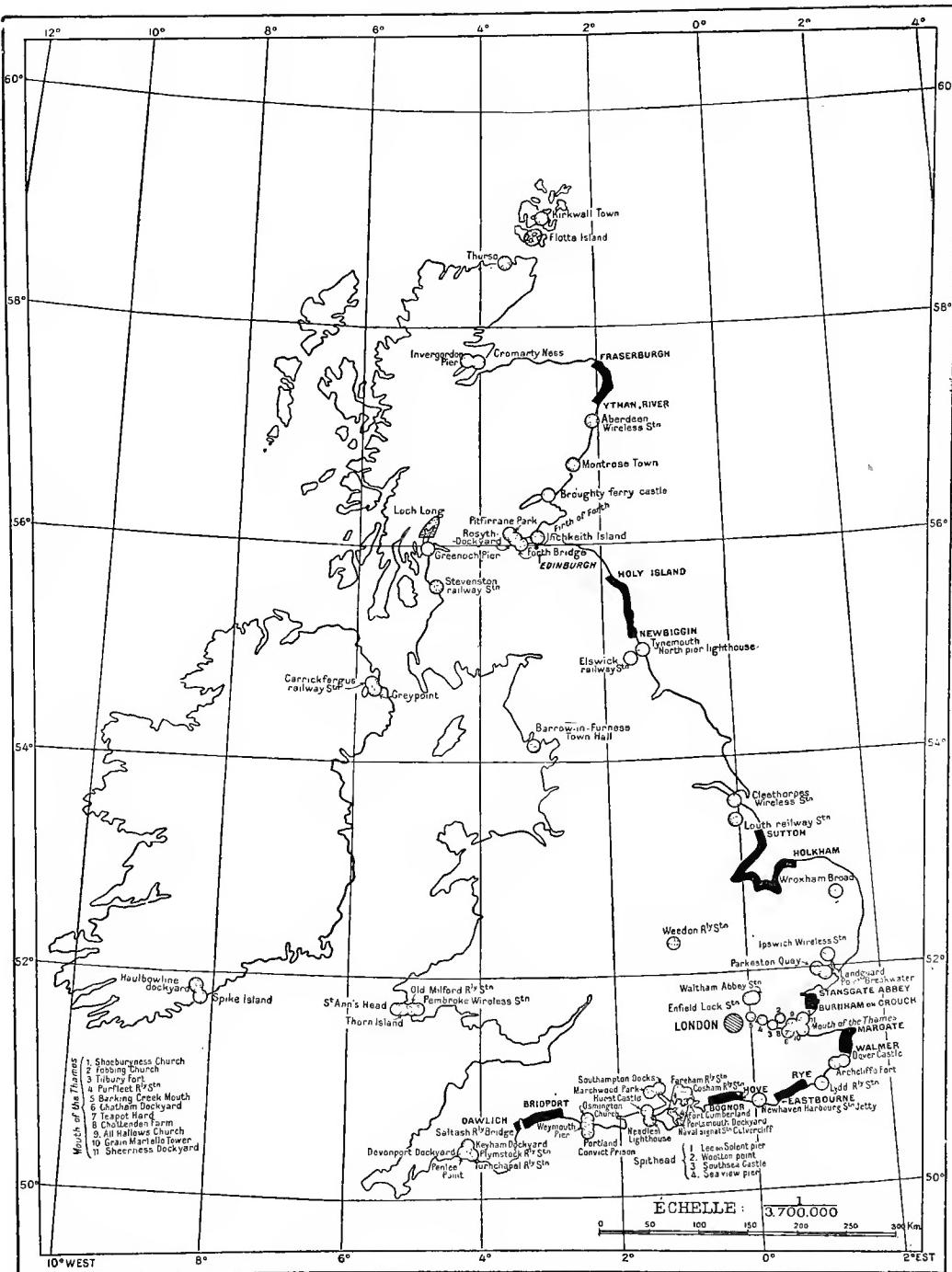
IX. Saving. nothing in the foregoing orders shall be construed as conferring on a person navigating an aircraft any right to land in any place as against the owner of the land or other persons interested therein, or as affecting the rights or remedies of any person in respect of any injury to person or property caused by any aircraft.

R. MCKENNA,
One of His Majesty's Principal
Secretaries of State.
Home Office, Whitehall, March 1st, 1913.

Notes



Map of France with shaded portions representing the zones forbidden to aerial navigation in 1914. Prepared by the French Institut Cartographique Militaire.



Map of Great Britain with shaded and black portions representing the zones forbidden to aerial navigation in 1914. Prepared by the French Institut Cartographique Militaire

SCHEDULE I**PROHIBITED AREAS**

Each of the places named or described in the following list, with the land and territorial waters surrounding such place, to a distance of three geographical miles in all directions from its boundary, shall be a prohibited area for the purposes of the foregoing Order No. I:—

Kirkwall Town	Chatham Dockyard
Flotta Island	Teapot Hard
Thurso Town	Chattenden Farm
Cromarty Ness	Allhallows Church
Invergordon Pier	Grain Martello Tower
Aberdeen Wireless Station	Sheerness Dockyard
Montrose Town	Dover Castle
Broughty Ferry Castle	Archcliffe Fort
Inchkeith Island	Lydd Railway Station
Rosyth Dockyard	Newhaven Station Harbour Jetty
Pitfiorane Park	Fort Cumberland
Forth Bridge	Spithead: namely, the space between a line from Lee-on-Solent Pier to Wootton Point and a line from Southsea Castle to Seaview Pier
Tynemouth, North Pier Lighthouse	Portsmouth Dockyard
Elswick Railway Station	Cosham Railway Station
Cleethorpes Wireless Station	Fareham Railway Station
Louth Railway Station	Culver Cliff Naval Signal Station
Wroxham Broad (Norfolk)	Needles Lighthouse
Weedon Railway Station (Northamptonshire)	Southampton Docks
Landguard Point, Bradwater (Felixstowe)	Marchwood Park
Parkeston Quay	Hurst Castle
Ipswich Wireless Station	Osmington Church
Shoeburyness Church	Weymouth Pier
Fobbing Church	Portland Convict Pier
Tilbury Fort	Turnchapel Railway Station
Purfleet Railway Station	Plymstock Railway Station
Barking Creek Mouth	Keyham Dockyard
Waltham Abbey Railway Station	Devonport Dockyard
Enfield Lock Railway Station	Saltash Railway Bridge
	Penler Point
	Thorn Island (Milford Haven)
	Pembroke Wireless Station
	Old Milford Railway Station
	St. Ann's Head
	Barrow-in-Furness Town Hall
	Stevenston Railway Station

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Greenock Pier
 So much of Loch Long as lies north of a line drawn due east from Knap Point
 Carrickfergus Railway Station
 Grey Point
 Spike Island
 Haulbowline Dockyard

SCHEDULE II

PORTIONS OF THE COASTLINE NOT PROHIBITED TO AIRCRAFT FROM ABROAD

The following portions of the coastline, including in each case the seaward boundary of the places named, are excepted from the prohibition imposed by Order No. II on aircraft coming from places outside the United Kingdom:—

From Fraserburgh to Ythan River.
 From Holy Island to Newbiggin.
 From Sutton (Lincolnshire) to Holkham (Norfolk).
 From Stansgate Abbey, on the Blackwater, to Burnham-on-Crouch.
 From Margate to Walmer.
 From Rye to Eastbourne.
 From Hove to Bognor.
 From Bridport to Dawlish.

SCHEDULE III

PRESCRIBED LANDING AREAS

The areas bounded towards the sea by the portions of the coast-line specified in Schedule II, and extending in each case to a distance of five geographical miles inland.

Any person navigating an aircraft in contra-

vention of the foregoing orders is liable on conviction to imprisonment for six months or to a fine of £200 or to both imprisonment and fine.

Any aircraft which flies or attempts to fly over a prohibited area, and any aircraft coming from a place outside the United Kingdom which flies or attempts to fly over a prohibited portion of the coast-line or fails to comply with the conditions as to landing prescribed in the foregoing Order No. III is liable to be fired on in accordance with Section 2 of the Aerial Navigation Act, 1913, and the regulations made thereunder.

If any person in any aircraft is anywhere guilty of any act of espionage within the provisions of Section 1 of the Official Secrets Act, 1911, he is liable to seven years' penal servitude.

In pursuance of the powers conferred on me by Section 2 of the Aerial Navigation Act, 1913, I hereby make the following regulations.

1. The officer to give the signals and take the action mentioned in the said section shall be a commissioned officer in His Majesty's naval or military forces.

2. The signals which may be given when an aircraft flies or attempts to fly over any of the prohibited areas, or when an aircraft coming from a place outside the United Kingdom flies or attempts to fly over any prohibited portion of the coastline or fails to comply with any of the conditions as to landing prescribed by the orders made by the Secretary of State under the said Acts shall be as follows:

By day: Three discharges at intervals of not less than ten seconds of a projectile showing smoke on bursting.

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By night: Three discharges at intervals of not less than ten seconds of a projectile showing red stars or red lights.

3. On such signal being given the aircraft shall immediately land at the nearest practicable spot, provided that if it be approaching or flying over any prohibited area it shall not in descending advance further towards or into the area.

4. If an airship is unable to land immediately in response to the signal owing to stress of weather, fog, breakage of machinery, or other unavoidable cause, it shall make the following signal:

By day: Show from the place where they can be most clearly seen from below a red triangular flag, together with two black balls superimposed vertically one above the other.

By night: Wave a white light, at the same time extinguishing the side-lights, and it shall, as soon as possible, land at the nearest practicable spot in the United Kingdom.

R. MCKENNA.

On August 2d, 1914, an order was issued by the Home Secretary prohibiting navigation of all except naval and military aircraft over the whole area of the United Kingdom.

United States War Restrictions on Civilian Flying

Restrictions on civilian flying in the United States were placed on February 28, 1918, when the following Presidential Proclamation was made public:

Whereas the United States of America is now at

war, and the Army and Navy thereof are endangered in their operations and preparations by aircraft, I, Woodrow Wilson, President of the United States, by virtue of the authority vested in me by the Constitution as Commander in Chief of the Army and Navy of the United States and of the militia of the several States when called into the actual service of the United States, do hereby for the protection of such forces issue the following proclamation:

I. A license must be obtained from the joint Army and Navy board on aeronautic cognizance by or in behalf of any person who contemplates flying in a balloon, aeroplane, hydroplane, or other machine or device over or near any military or naval forces, camp, fort, battery, torpedo station, arsenal, munition factory, navy yard, naval station, coaling station, telephone or wireless or signal station, or any building or office connected with the national defense, or any place or region within the jurisdiction or occupation of the United States which may be designated by the President as a zone of warlike operations or of warlike preparation.

II. The license will specify the person to whom it is issued, the machine to be used, the persons to operate the machine, and all other persons to be carried therein, the mode of marking or otherwise identifying the machine, and other details intended to assure the military and naval forces of the peacefulness of the errand.

III. The license will also specify the territory and the time wherein it shall be available.

IV. In case any aircraft shall disregard this proclamation or the terms of the license, it shall be the right and duty of the military or naval forces to treat the aircraft as hostile and to fire upon it or otherwise destroy it, notwithstanding the resultant danger to human life.

V. For the present, the President designates as a zone of military operations and of military preparations the whole of the United States and its territorial waters and of the insular possessions of the Panama Canal Zone.

VI. The provisions of this proclamation do not apply to aircraft operated by the Army or Navy of the United States.

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VII. No private flying without a license will be permitted after the expiration of 30 days from the date of this proclamation.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the District of Columbia this 28th day of

February, in the year of our Lord 1918, and of the independence of the United States the 142d.

WOODROW WILSON.

By the President:

ROBERT LANSING,

Secretary of State.

Notes

GERMANY'S DECLARATION OF WAR ON FRANCE BASED ON ALLEGED BOMBING OF GERMAN TERRITORY

In the French "Yellow Book," with other important documents regarding the world war, are the following letters:

No. 147. Letter handed by the German Ambassador to M. René Viviani, President of the Council, Minister for Foreign Affairs, during his farewell audience, August 3, 1914, at 6.45 p. m.

M. le Président,

The German administrative and military authorities have established a certain number of flagrantly hostile acts committed on German territory by French military aviators. Several of these have openly violated the neutrality of Belgium by flying over the territory of that country; one has attempted to destroy buildings near Wesel; others have been seen in the district of the Eifel, one has thrown bombs on the railway near Carlsruhe and Nuremberg.

I am instructed, and I have the honour to inform your Excellency, that in the presence of these acts of aggression the German Empire considers itself in a state of war with France in consequence of the acts of this latter Power.

At the same time I have the honour to bring to the knowledge of your Excellency that the German authorities will detain French mercantile vessels in German ports, but they will release them if, within forty-eight hours, they are assured of complete reciprocity.

My diplomatic mission having thus come to an end it only remains for me to request your Excellency to be good enough to furnish me with my passports, and to take the steps you consider suitable to assure my return to Germany, with the staff of the Embassy, as well as with the staff of the Bavarian Legation and of the German Consulate General in Paris.

Be good enough, M. le Président, to receive the assurances of my deepest respect.

(Signed) SCHOEN.

No. 148. M. René Viviani, President of the Council, Minister for Foreign Affairs, to the French Representatives Abroad

Paris, August 3, 1914.

The German Ambassador has asked for his passports and is leaving this evening with the staffs of the Embassy, the German Consulate General and the Bavarian Legation. Baron von Schoen has given as his reason the establishments by the German administrative and military authorities of acts of hostility which are said to have been committed by French military aviators accused of having flown over the territory of the Empire and thrown bombs. The Ambassador adds that the aviators are said to have also violated the neutrality of Belgium by flying over Belgian territory. "In the presence of these acts of aggression," says the letter of Baron von Schoen, "the German Empire considers itself in a state of war with France in consequence of the acts of this latter Power."

I formally challenged the inaccurate allegations of the Ambassador, and for my part I reminded him that I had yesterday addressed to him a note protesting against the flagrant violations of the French frontier committed two days ago by detachments of German troops.

RENÉ VIVIANI.

During the speech delivered by Mr. Viviani, the President of the Council, to the French Chamber of Deputies on August 4th, 1914, he stated:

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"At no time has any French aviator penetrated into Belgium, nor has any French aviator committed either in Bavaria or any other part of Germany any hostile act."

During this address Mr. Viviani, in enumerating the German attacks on French soil and violation of the French frontier at fifteen points and killing and wounding of Frenchmen by German soldiers, stated:

"Yesterday a German military aviator dropped three bombs on Lunéville."

No further official statement was issued by Germany regarding this alleged dropping of bombs by French aviators which was claimed as the *casus belli*. The following letter, which appeared in the New York *Times* November 3, 1916, is of interest:

Columbia University, Nov. 1, 1916.

To the Editor of The New York Times:

I trust that you will be able to spare me a little further space upon the question whether or not French bombs did fall on Nürnberg on the 2d of August, 1914. It has more than a purely academic interest, because the allegation was one of the chief points in the "acts of aggression" to repel which the German Empire "considered itself in a state of war with France."

A day or two after the appearance of my letter of Oct. 18 I received one from Professor W. A. Neilson of Harvard University in which he suggested a possible solution of the mystery. With his permission I cite the following passage from it:

"I was in Offenburg, Baden, at the outbreak of the war, and on the day before the reports of the Nürnberg incident began to appear in the German papers I read, posted on a kiosk near the railroad station at Offenburg, a typewritten copy of a telegram, issued from the Reichspost, announcing the dropping of bombs on Neuenburg, a little town near Mülheim, on the Rhine. The next day the newspapers had the same dispatch, with the name changed to Nürnberg."

I have never believed the story of the bombs or of any of the other breaches of peace attributed to the French, since we know the extreme care taken by the Paris authorities to prevent any such occurrences by keeping the army ten kilometers behind the boundary line. But if the German attempt to fix a violation of international comity upon the French in order to give foundation for the cry "We are attacked!" centered at first around Neuenburg, for what reason was it changed into Nürnberg the very next day?

In my desire to preserve the neutral attitude of a historian, I have been at pains to find some German official rendering of the note presented by Herr von Schoen to M. Viviani; supposing—at a hazard—that a mistake in the name may have crept into the French and English versions. To find this is not easy; for although Germany is apt to pride herself upon her literary output—and indeed what she has printed and written about the war is by no means a small amount—she has been wonderfully chary of giving out documents relating to the beginning of the conflict. Her "Vorläufige Denkschrift und Aktenstücke" is a meagre pamphlet of 37 pages; while that of France contains 216 and that of England 194. But in Dr. Max Beer's "Die Europäischen Kriegsverhandlungen," (Berne, 1915, p. 354)—which looks very official—the words run "Ein anderer warf Bomben auf die Eisenbahn in der Nähe von Karlsruhe und Nürnberg." The same name is found in Dr. Edmund von Mach's "Official Diplomatic Documents Relating to the Outbreak of the European War," page 428—a book compiled for the express purpose of acquitting Germany of any false dealings, though written under the guise of a historical source book. In the German Chancellor's speech before the Reichstag on Aug. 5 he spoke of "French fliers dropping bombs as far from France as South Germany." Though the *Kölnische Zeitung* of Oct. 3 reported from München that the Bavarian Ministry of War for the time being doubted the report that fliers had been seen who dropped bombs on the railroad tracks near Nürnberg, the *Berliner Tageblatt* of the same date knew better, and published a report dated Sunday, Aug. 2, 2:45 P. M., giving a statement authorized by the military authorities that French fliers on Sunday morning had dropped bombs in the

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neighborhood of Nürnberg. In addition, E. Henry Lacombe in your issue of Oct. 20 (on the authority of Professor Thomas F. A. Smith) cites a Nürnberg paper, the *Fränkische Tagspost*, which during the whole month of August, 1914, knew nothing at all about the raid.

The question is pertinent, Why did the German Government change Neuenburg to Nürnberg; or, if it did not make the change, why did it announce something which was not based even upon "a scrap of paper"? Was it done in order to stimulate the war ardor in South Germany? Are the Germans always so "Wissenschaftlich" that they take about a year and a half to find out the truth when it could have been known by telephone in a minute and half? Some

of my ninety-three colleagues at the universities in Germany needed a full year to see the error of their ways; and it took a like time before Dessauer's "Hymn of Hate" was disavowed. Professor Münsterberg has talked overmuch about the "service to mankind" which Germany is willing to perform. Is prevarication an integral part of "Deutsche Kultur"?

The *Kölnische Zeitung*, which is no way a "gutter" newspaper, is frank enough to say: "Circumstances often compel us to swerve from the right path and to answer lies by lies. This is the only way to silence the liars. When our soldiers' strong arms have prevailed, we shall be glad to return to our habit of strict frankness."

RICHARD GOTTHEIL.

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INTERNATIONAL LAW ACKNOWLEDGED ON DECLARATION OF WAR

The Belgian Grey Book and the French Yellow Book contain the following evidences that international law was acknowledged even by Germany and was strictly followed by France, Belgium and England:

(From the Yellow Book)

No. 157. Notification of the French Government to the Representatives of the Powers at Paris

The German Imperial Government, after having allowed its armed forces to cross the frontier, and to permit various acts of murder and pillage on French territory; after having violated the neutrality of the Grand Duchy of Luxembourg in defiance of the stipulations of the Convention of London, 11th May, 1867, and of Convention V. of the Hague, 18th October, 1907, *on the rights and duties of Powers and persons in case of war on land* (Articles 1 and 2), Conventions which have been signed by the German Government; after having addressed an ultimatum to the Royal Government of Belgium with the object of requiring passage for German troops through Belgian territory in violation of the Treaties of the 19th April, 1859, which had been signed by them, and in violation of the above Convention of the Hague.

Have declared war on France at 6:45 p.m. on the 3rd August, 1914.

In these circumstances the Government of the Republic find themselves obliged on their side to have recourse to arms.

They have in consequence the honour of informing by these presents the Government of . . . that a state of war exists between France and Germany dating from 6.45 p.m. on 3rd August, 1914.

The Government of the Republic protest before all civilised nations, and especially those Governments which have signed the Conventions and Treaties re-

ferred to above, against the violation by the German Empire of their international engagements, and they reserve full right for reprisals which they might find themselves brought to exercise against an enemy so little regardful of its plighted word.

The Government of the Republic, who propose to observe the principles of the law of nations, will, during the hostilities, and assuming that reciprocity will be observed, act in accordance with the International Conventions signed by France concerning the law of war on land and sea.

The present notification, made in accordance with Article 2 of the Third Convention of the Hague of the 18th October, 1907, relating to the opening of hostilities and handed to . . .

Paris, August 4, 1914, 2 p.m.

(From the Grey Book)

No. 22. Note Communicated by M. Davignon, Belgian Minister for Foreign Affairs, to Herr von Below Saleske, German Minister

Brussels, August 3, 1914 (7 a.m.)

The German Government stated in their note of the 2nd August, 1914, that according to reliable information French forces intended to march on the Meuse via Givet and Namur, and that Belgium, in spite of the best intentions, would not be in a position to repulse, without assistance, an advance of French troops.

The German Government, therefore consider themselves compelled to anticipate this attack and to violate Belgian territory. In these circumstances, Germany proposed to the Belgian Government to adopt a friendly attitude towards her, and undertook, on the conclusion of peace, to guarantee the integrity of the Kingdom and its possessions to their full extent. The note added that if Belgium put difficulties in the way of the advance of German troops, Germany would be compelled to consider her as an enemy, and to leave

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the ultimate adjustment of the relations between the two States to the decision of arms.

This note has made a deep and painful impression upon the Belgian Government.

The intentions attributed to France by Germany are in contradiction to the formal declarations made to us on August 1, in the name of the French Government.

Moreover, if contrary to our expectation, Belgian neutrality should be violated by France, Belgium intends to fulfill her international obligations and the Belgian army would offer the most vigorous resistance to the invader.

The treaties of 1839, confirmed by the treaties of 1870, vouch for the independence and neutrality of Belgium under the guarantee of the Powers, and notably of the Government of His Majesty the King of Prussia.

Belgium has always been faithful to her international obligations, she has carried out her duties in a spirit of loyal impartiality, and she has left nothing undone to maintain and enforce respect for her neutrality.

The attack upon her independence with which the German Government threatens her constitutes a flagrant violation of international law. No strategic interest justifies such a violation of law.

The Belgian Government, if they were to accept the proposals submitted to them, would sacrifice the honour of the nation and betray their duty towards Europe.

Conscious of the part which Belgium has played for more than eighty years in the civilisation of the world, they refuse to believe that the independence of Belgium can only be preserved at the price of the violation of her neutrality.

If this hope is disappointed the Belgian Government are firmly resolved to repel, by all the means in their power, every attack upon their rights.

DAVIGNON.

No. 35. Baron Beyens, Belgian Minister at Berlin, to M. Davignon, Belgian Minister for Foreign Affairs

Berlin, August 4, 1914.

Sir,

I have the honour to transmit to you herewith a translation of part of the speech made to-day in the Reichstag by the Imperial Chancellor on the subject of the infamous violation of Belgian neutrality:—

“We are in a state of legitimate defence and necessity knows no law.

“Our troops have occupied Luxemburg and have perhaps already entered Belgium. This is contrary to the dictates of international law. France has, it is true, declared at Brussels that she was prepared to respect the neutrality of Belgium so long as it was respected by her adversary. But we know that France is ready to invade Belgium. France could wait; we could not. A French attack upon our flank in the region of the Lower Rhine might have been fatal. We were, therefore, compelled to ride roughshod over the legitimate protests of the Governments of Luxemburg and Belgium. For the wrong which we are thus doing, we will make reparation as soon as our military object is attained.

“Any one in such grave danger as ourselves, and who is struggling for his supreme welfare, can only be concerned with the means of extricating himself; we stand side by side with Austria.”

It is noteworthy that Herr von Bethmann-Hollweg recognises, without the slightest disguise, that Germany is violating international law by her invasion of Belgian territory and that she is committing a wrong against us.

BEYENS.

No. 39. Count de Lalaing, Belgian Minister at London, to M. Davignon, Belgian Minister for Foreign Affairs

(Telegram.) London, August 4, 1914.

Great Britain this morning called upon Germany to respect Belgian neutrality. The ultimatum says that whereas the note addressed by Germany to Belgium

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threatens the latter with an appeal to the force of arms if she opposes the passage of German troops; and whereas Belgian territory has been violated at Gemmenich; and whereas Germany has refused to give Great Britain a similar assurance to that given last week by France; therefore Great Britain must once again demand a satisfactory reply on the subject of

the respect of Belgian neutrality and of the treaty to which Germany, no less than Great Britain, is a signatory. The ultimatum expires at midnight.

In consequence of the British ultimatum to Germany, the British proposal which I telegraphed to you is cancelled for the time being.

COUNT DE LALAING.

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INTERNATIONAL LAW OF BOMBARDMENT AND THE WORLD WAR

Aerial bombardment is limited by article 25 of the Hague Convention of 1907, which provides that:

"the attack and bombardment by any means whatever of towns, villages, habitations or buildings which are not defended is forbidden."

Article 1 of the Second Hague Convention, respecting Bombardment by Naval Forces in Time of War, declares that:

"the bombardment by naval forces of undefended ports, towns, villages, dwellings, or buildings is forbidden."

Article 27 of the Regulations annexed to the Hague Convention concerning the Laws and Customs of War provide that:

"in sieges and bombardments all necessary steps should be taken to spare, as far as possible, buildings devoted to religion, art, science and charity, historic monuments, hospitals, and places where the sick and wounded are collected, provided they are not used at the same time for military purposes."

ANDREW CARNEGIE'S PROPOSAL TO OUTLAW AIRCRAFT

Active workers in the "universal peace" movement have advocated the outlawing of aircraft as instruments of war. Andrew Carnegie, in a letter to the writer, in February, 1914, wrote:

"Henry Woodhouse, Esq.,
No. 297 Madison Avenue,
New York City.
Dear Sir:—

"Yours of February 14 received. I have hitherto been concerned in regard to the airship becoming an

instrument of destruction, like submarines, and have expected a movement for debarring them from being used for projectiles or bombs which could be dropped from above to destroy. They should be ultra vires.

"Very truly yours,
"(Signed) ANDREW CARNEGIE."

The Honorable William G. Sharp, American Ambassador to France, has repeatedly urged that the nations of the world forbid air bombing. In communications with the writer, beginning in 1911, when Mr. Sharp was a member of the House of Representatives, Mr. Sharp forecasted the extensive use of aircraft for utilitarian purposes and its great possibilities as a factor to bring about closer understandings and co-operation between nations. He was the spokesman for aeronautics in Congress until he was appointed Ambassador to France.

Throughout the war Mr. Sharp deplored the "wicked use to which aircraft have been perverted by the enemy, whose only purpose seems to be to destroy and kill."

On December 22nd, 1918, while speaking at Le Mans, France, at the Wright-Lafayette ceremonies, when the foundation stone of the Wilbur Wright monument was laid, he said:

"The very horrors of its abuses will compel the civilized nations hereafter to abandon forever the employment of aircraft for the casting of bombs. As it is a barbarous method of murdering innocents and is lacking in military value, it should be outlawed by the coming league of nations. The submarine—that other evil genius of modern warfare, and even more monstrous—should similarly be banished."

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AERIAL VIOLATIONS OF NEUTRALITY DURING THE WORLD WAR

International laws of war provide that "belligerents are forbidden to move troops or convoys, or other munitions of war or supplies across the territory of a neutral power"; and that "the fact of a neutral power resisting, even by force, attempts to violate this neutrality cannot be regarded as a hostile act."

The use of aircraft for warfare in the world war brought out new problems which had not been anticipated by the Hague Conventions, the Geneva Conference or the St. Petersburg Conference, or the Paris Aeronautic Conference of 1910.

Owing to the necessity of flying at great heights on account of the enemy aerial patrols and anti-aircraft defenses, aeroplanes of the belligerent nations were subject to the difficulties attending flying at high altitudes by day or night. Excepting when land is in sight an aircraft is apt to drift in strong winds without the knowledge of the pilot, therefore subject to drifting over neutral territory without the pilot being aware of it.

Likewise, bombs dropped from high altitudes are subject to drift caused by strong winds, therefore will drop far from their intended target and on neutral territory, when the neutral territory is close by.

Aviators on bombing missions are apt to lose their way while flying at high altitudes in clouds or in fogs, or in the darkness of the night, and mistake one place for another and drop their bombs on neutral territory.

A number of such cases happened during the world war and the belligerent nations apologized and indemnified the neutral nations for the damage done.

A number of aeroplanes of the Allied and Central Powers landed in neutral countries during the war and the planes and the aviators were interned.

The world war was only a few days old when German aeroplanes began flying over Belgian territory. Some Belgian aeroplanes took up the work of defense. At the time military aeroplanes flew low and it was possible to hit them with rifle fire from the ground. There were no anti-aircraft guns in use.

A press despatch dated August 14th, 1914, stated that two German naval aviation officers who had started from the German island of Bourkem in the North Sea, on a scouting expedition, had been forced to descend on the Dutch island of Schiermonnik Oog. The officers were arrested and disarmed. On August 15, 1914, was reported the dropping of bombs on the Belgian city Namur by a German aeroplane. There was also reported the dropping of bombs on the French city of Vesoul and the French town of Lure by a German aviator whose machine carried the French colors.

At that time it was also announced that the spires of the Cologne, Germany, Cathedral and other churches were being transformed into aeroplane defense stations, guns being mounted on the belfries of the churches.

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The latter created a new problem which had not been foreseen by the Hague and other Conventions. Henceforth reports were printed stating that cities of the belligerent nations which had previously been considered as being wholly in the class of "undefended cities" were outclassed by the use of buildings for anti-aircraft defenses; and the churches, which were protected by Article 27 of the regulations of the Hague Convention, were outclassed if found to be used as bases for anti-aircraft defenses.

A chronologic record of the bombing raids conducted by the belligerent nations is to be found in the "Textbook of Naval Aeronautics" (published by the Century Co., 1917); and the "Textbook of Military Aeronautics," (published by the Century Company 1918).

Following the German raids on Belgium, France and England, bombing became general and the neutral countries suffered from time to time by violations of neutrality by belligerent aviators. The subject received considerable attention at different times in connection with bombing raids.

Following the raid by British aviators, who bombarded the Zeppelin sheds at Friedrichshafen in 1914, Mr. Booth asked the Prime Minister in the House of Commons if instructions had been given to the aviators who conducted the bombardment to avoid neutral territory and what was the policy of the British Government with regard to the passage of warlike machines, over the land or territorial waters of neutral countries.

Mr. Churchill, who replied, said:—"Instructions were given to the naval flying officers who

attacked the Zeppelin factory at Friedrichshafen to avoid neutral territory, and the course drawn on the maps supplied to them should have taken them well clear of Switzerland. When machines are flying at a great height it is almost impossible for any but a skilled observer to determine with any accuracy the course the aircraft are taking unless he is directly beneath them. No agreement was reached at the Paris Conference, 1910, in regard to the passage of belligerent aircraft over neutral territory."

On April 28th, 1915, the American oil tanker *Cushing*, on its way from Philadelphia, United States, to Rotterdam, was bombed by German aviators. The U. S. Minister, Henry Van Dyke's report to the U. S. State Department read as follows:

"American Consul, Rotterdam, reports American steamship *Cushing*, Capt. Herland, with petroleum, from Philadelphia to Rotterdam, flying American flag, was attacked by German aeroplanes near North Hinder Lightship Thursday afternoon, April 28th. Three bombs dropped. One struck ship causing damage but no life lost."

This attack was mentioned in the note to Germany, which read as follows:

"The Secretary of State to the American Ambassador at Berlin:

"Please call on the Minister of Foreign Affairs and after reading to him this communication, leave with him a copy.

"In view of recent acts of the German authorities in violation of American rights on the high seas, which culminated in the torpedoing and sinking the British steamship *Lusitania* on May 7th, 1915, by which over 100 American citizens lost their lives, it is clearly wise and desirable that the Government of the United States and the Imperial German Government should come to a clear and full understanding as to the grave situation which has resulted.

"The sinking of the British passenger steamship *Falaba* by a German submarine on March 28th, through which Leon C. Thrasher, an American citizen, was drowned; the attack on April 28th on the American vessel *Cushing* by a German aeroplane, the torpedoing on May 1st of the American vessel *Gulflight* by a German submarine, as a result of which two or more American citizens met their death, and finally the torpedoing and sinking of the steamship *Lusitania*, constitute a series of events which the Government of the United States has observed with growing concern, distress and amazement.

"Recalling the humane and enlightened attitude hitherto assumed by the Imperial German Government in matters of international right and particularly with regard to the freedom of the seas; having learned to recognize the German views and German influence in the field of international obligation as always engaged upon the side of justice and humanity; and having understood the instructions of the Imperial German Government to its naval commanders to be upon the same plane of humane action prescribed by the naval codes of other nations, the Government of the United States was loath to believe—it cannot now bring itself to believe—that these acts, so absolutely contrary to the rules, the practices, and the spirit of modern warfare, could have the countenance and sanction of that great Government."

At about the time of the *Cushing* attack, Austrian aviators dropped bombs on Roumanian soil. The Austrian Government expressed its

regret to Roumania, stating that the accident was due to the mistaking of Severin for a Serbian town, and that Austria would indemnify Roumania for the damage done by the three bombs and for the wounding of the two Roumanian soldiers.

Switzerland had a great many causes to complain for violations of neutrality. Most of the cases were violations of neutrality due to belligerent aviators flying over Swiss territory.

On October 7th, 1918, the Second Swiss Balloon Company was practicing near Miercourt, Switzerland, some miles from the German frontier. Lieut. Walter Flury, of the Swiss Army, was up in a balloon which bore the Swiss cross and the Swiss flag. Two German aeroplanes appeared and turned the fire of their machine guns on the balloon, killing Lieut. Flury and setting the balloon on fire.

The Swiss Foreign Office sent a note to the German Government protesting vigorously and stating that the Swiss Government expected full satisfaction, including the punishment of the guilty aviators, compensation to the family of the deceased officer, and indemnity for the loss of the balloon destroyed.

Notes

INTERNATIONAL LAW OF REPRISALS AND THE WORLD WAR

Reprisals are recognized by international law as legitimate means for compelling the enemy, who has broken the recognized laws of war, to comply with them in the future. The "Manual of the Laws of War," of the Institute of International Law, limit reprisals as follows:

"(1) Reprisals are prohibited in case reparation is given for the damage done by an illegal act; (2) in grave cases, in which reprisals are an imperative necessity, they must never exceed the degree of the violation committed by the enemy; (3) they may only be resorted to with the authorization of the Commander in Chief; (4) they must in every case respect the laws of humanity and of morality."

The "British Manual of Land Warfare" defines the principles of reprisals as follows:

"Reprisals between belligerents are retaliation for illegitimate acts of warfare, for the purpose of making the enemy comply in future with the recognized laws of war. . . . They are not a means of punishment, or of arbitrary vengeance, but of coercion. . . . Reprisals are an extreme measure because in most cases they inflict suffering upon innocent individuals. In this, however, their coercive force exists, and they are indispensable as a last resource."

The instructions for the armies of the United States specify that

"Retaliation will never be resorted to as a measure of mere revenge, but only as a means of protective retribution, and, moreover, cautiously and unavoidably; that is to say, retaliation shall only be resorted to after careful inquiry into the real occurrence and the character of the misdeeds that may demand retribution. Unjust or inconsiderate retaliation removes the belligerents further and further from the mitigat-

ing rules of a regular war, and by rapid steps leads them nearer to the internecine wars of savages."

Following Germany's War Zone Decree of Feb. 4th, 1915, in which she asserted the right to sink all merchant vessels in the zone, public opinion began to demand that the German violations of international laws, by air as well as the violations at sea, be punished by reprisals. This doctrine was opposed strongly by the British and Italian Governments.

The refusal on the part of the Allied Governments to consider reprisals as a means of punishing Germany for her violations of international laws created public dismay, especially when the British, French, Italian and American Governments actually refused to build large aeroplanes, holding that large aeroplanes could only be used for long distance bombing and that whereas the policy was not to conduct air raids on cities in the interior of Germany, there was no need for large aeroplanes.

Reprisals were proposed repeatedly by members of the British Parliament, and were opposed by the British Government.

On March 21st, 1918, General Croft asked the Prime Minister whether, bearing in mind that two British flying men had suffered about a month's imprisonment for dropping pamphlets, it was proposed to inflict a reprisal on two enemy flying men in order to show the German Government Great Britain's determination to secure proper treatment for British prisoners of war in

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their hands; and, in future would he consider the advisability of at once taking reprisals for acts committed by the German Government against British prisoners of war instead of giving a time limit during which period British prisoners were suffering such treatment. Mr. James Hope (Lord of the Treasury) answered as follows:

"His Majesty's Government are fully determined to take all necessary measures to secure redress for British prisoners of war improperly treated by the enemy. We understand that the two British airmen in question have been released. As regards the second part of the question, I would remind my honorable and gallant friend, that both Governments are bound under the Hague agreement to give a month's notice before reprisals are started."

General Croft then asked:

"Can the honorable gentleman tell me if it is a fact that German officers have been transferred from the west to the east coast of this country?" to which Mr. Hope replied "It has been thought desirable to transfer a number of German officers from the west of England to the east coast, but this must not be regarded as a measure of reprisals or punishment. The climate of the Kent and Essex coast is at least as good, and probably better, than that in a number of prison camps in Germany."

Mr. Billing, M. P., asked the Prime Minister whether his attention had been called to a statement that Germany was prepared to refrain from air attacks on Great Britain providing British raids over German territory cease; and whether, having regard to the avowed policy of the Government that British air raids into Germany were in no sense reprisals, but legitimate acts of war, he would accept this indication from Germany as an expression of the success of their new aggressive air policy, and, in consequence,

redouble British aerial activity over German towns. Mr. Bonar Law replied: "As regards the first part of the question, I have seen certain statements in the press. As regards the second part of the question, the Government are doing everything in their power to make the raids into Germany effective." Mr. Billing then asked: "Can the House understand that the raids which are being carried out into Germany are considered by His Majesty's Government as legitimate acts of war, and will not be discontinued in the event of the enemy squealing on the point of reprisals," to which Mr. Bonar Law replied: "The House does understand that they are, in our opinion legitimate acts of war, and such acts are by no means undertaken as reprisals."

The Vatican and Air Raids

On June 3rd, 1918, at the House of Commons, Colonel Sir F. Hall asked the Prime Minister if, in response to an appeal received through the Vatican, the Government have undertaken that there should be no aircraft attack on cities not in the vicinity of the battlefield during the daytime on May 30; whether a like appeal was made to the Allied Governments concerned; and, if so, with what result; if he can state whether any similar action has at any time been taken by the Vatican with reference to the bombing of hospitals and the torpedoing of hospital ships by the Germans; and, if so, with what result; and, if not, whether, as the lives of British soldiers and sailors wounded while fighting in the defence of freedom may be regarded as of not less value than those of the persons who assemble on Corpus Christi Day to pray for the success

of Germany in her attacks on the liberties of the world, the Government will take the opportunity to make representations to the Vatican on the matter.

Mr. R. McNeill asked the Prime Minister whether an understanding was given, or an announcement made, by the British Government that a German town should be immune from attack by British aircraft on May 30; if so, at whose request was such an undertaking given and what reasons were offered for compliance with it; were the military authorities in France consulted on the subject; was any promise of reciprocal immunity from aerial attack by Germany on cities of the Allies obtained in consideration of such an undertaking; if he was aware that a church in Paris was bombarded on that day by the Germans; and will he give an assurance that no such unmerited favour to the enemy will be allowed to interfere with the prosecution of military operations in future?

Captain Carr-Gomm asked the Prime Minister whether, when assenting to the request of the Vatican that there should be no air attack on Cologne on the feast of Corpus Christi, the attention of the Vatican was drawn to the shelling of Paris on Good Friday, whereby casualties were inflicted on the congregation of a church, to the recent aerial bombardment of hospitals at Etaples, and to the air raid on London on Whit-Sunday night?

Mr. Bonar Law: The appeal referred to was received by the French and British Governments, and the reply in the terms already announced was sent after consultation and in agreement with the French Government. The staff of the Air Ministry was also consulted.

The action of the Germans in shelling Paris in spite of our undertaking will not be forgotten, in the event of any similar appeal being made in the future.

Sir F. Hall: Can the right hon. gentleman say whether any undertaking was given by the German Government that the aircraft used for the protection of the back areas should not be used for bombing our hospitals and troops on Corpus Christi Day?

Mr. Bonar Law: It was precisely in connection with a question of this kind that we consulted the staff of the Air Ministry. They were of opinion that the use referred to could not be made, if for no other reason than that the notice was too short to enable other dispositions to be made.

Captain Carr-Gomm: Has the attention of the Vatican been drawn to the fact that on Whit-Sunday night London was bombed by German aircraft, and to other facts?

Mr. Bonar Law: No; they were not. It is quite obvious that the Government would have been fully justified in view of the raids at Whitsuntide in refusing altogether to consider such an application. In addition to that, it seems to me an example of German mentality that such a request should have been put forward after what happened at Whitsuntide. Though I think it was an impudent request it does not follow that it would be unwise to accede to it.

Mr. Herbert Samuel: Can the right hon. gentleman say whether the Germans were asked to take reciprocal action to spare on that day other places behind the British lines, and, if not, why not?

Mr. Bonar Law: They were not. I should have thought that such a request was quite unnecessary. If we had made such a request it

might have implied that we were making a bargain. We were not; we were doing this because we thought it was right to do it.

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AIR CLAUSES OF THE PEACE TREATY

The following clauses of the Treaty of Peace which relate to aeronautics are most interesting:

SECTION III

Article 198—The armed forces of Germany must not include any military or naval air forces.

Germany may, during a period not extending beyond October 1, 1919, maintain a maximum number of one hundred seaplanes or flying boats, which shall be exclusively employed in searching for submarine mines, shall be furnished with the necessary equipment for this purpose, and shall in no case carry arms, munitions or bombs of any nature whatever.

In addition to the engines installed in the seaplanes or flying boats above mentioned, one spare engine may be provided for each engine of each of these craft.

No dirigible shall be kept.

Article 199—Within two months from the coming into force of the present Treaty the personnel of the air forces on the rolls of the German land and sea forces shall be demobilized. Up to October 1, 1919, however, Germany may keep and maintain a total number of one thousand men, including officers, for the whole of the cadres and personnel, flying and non-flying, of all formations and establishments.

Article 200—Until the complete evacuation of German territory by the Allied and Associated troops, the aircraft of the Allied and Associated Powers shall enjoy in Germany

freedom of passage through the air, freedom of transit and of landing.

Article 201—During the six months following the coming into force of the present Treaty, the manufacture and importation of aircraft, parts of aircraft, engines for aircraft, and parts of engines for aircraft, shall be forbidden in all German territory.

Article 202—On the coming into force of the present Treaty, all military and naval aeronautical material, except the machines mentioned in the second and third paragraphs of Article 198, must be delivered to the Governments of the Principal Allied and Associated Powers.

Delivery must be effected at such places as the said Governments may select, and must be completed within three months.

In particular, this material will include all items under the following heads which are or have been in use or were designed for warlike purposes:

Complete aeroplanes and seaplanes, as well as those being manufactured, repaired or assembled.

Dirigibles able to take the air, being manufactured, repaired or assembled.

Plant for the manufacture of hydrogen.

Dirigible sheds and shelters of every kind for aircraft.

Pending their delivery, dirigibles will, at the expense of Germany, be maintained inflated with hydrogen; the plant for the manufacture of hydrogen, as well as the sheds for dirigibles, may,

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at the discretion of the said Powers, be left to Germany until the time when the dirigibles are handed over.

Engines for aircraft.

Nacelles and fuselages.

Armament (guns, machine guns, light machine guns, bomb-dropping apparatus, torpedo-dropping apparatus, synchronisation apparatus, aiming apparatus).

Munitions (cartridges, shells, bombs loaded or unloaded, stocks of explosives or material for their manufacture).

Instruments for use on aircraft.

Wireless apparatus and photographic or cinematograph apparatus for use on aircraft.

Component parts of any of the items under the preceding heads.

The material referred to above shall not be removed without special permission from the said Governments.

In particular it will be its duty to make an inventory of the aeronautical material existing in German territory, to inspect aeroplane, balloon and motor manufactories, and factories producing arms, munitions and explosives capable of being used by aircraft, to visit all aerodromes, sheds, landing grounds, parks and depots, to authorize, where necessary, a removal of material and to take delivery of such material.

The German Government must furnish to the Aeronautical Inter-Allied Commission of Control all such information and legislative, administrative or other documents which the Commission may consider necessary to ensure the complete execution of the air clauses, and in particular a list of the personnel belonging to all the German Air Services, and of the existing material, as well as of that in process of manufacture or on order, and a list of all establishments working for aviation, of their positions, and of all sheds and landing grounds.

Inter-Allied Commissions of Control— Sec. IV

Article 203—All the military, naval and air clauses contained in the present Treaty, for the execution of which a time-limit is prescribed, shall be executed by Germany under the control of Inter-Allied Commissions specially appointed for this purpose by the Principal Allied and Associated Powers.

Article 210—The Aeronautical Inter-Allied Commission of Control will represent the Governments of the Principal Allied and Associated Powers in dealing with the German Government in all matters concerning the execution of the air clauses.

Part VIII—Reparation, Annex 1

Compensation may be claimed from Germany under Article 232 above in respect of the total damage under the following categories:—

Damage to injured persons and to surviving dependents by personal injury to or death of civilians caused by acts of war, including bombardments or other attacks on land, on sea, or from the air, and all the direct consequences thereof, and of all operations of war by the two groups of belligerents wherever arising.

Damage in respect of all property wherever situated belonging to any of the Allied or Asso-

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ciated States or their nationals, with the exception of naval and military works or materials, which has been carried off, seized, injured or destroyed by the acts of Germany or her allies on land, on sea or from the air, or damage directly in consequence of hostilities or of any operations of war.

Part XI—Aerial Navigation

Article 313—The aircraft of the Allied and Associated Powers shall have full liberty of passage and landing over and in the territory and territorial waters of Germany, and shall enjoy the same privileges as German aircraft, particularly in case of distress by land or sea.

Article 314—The aircraft of the Allied and Associated Powers shall, while in transit to any foreign country whatever, enjoy the right of flying over the territory and territorial waters of Germany without landing, subject always to any regulations which may be made by Germany, and which shall be applicable equally to the aircraft of Germany and to those of the Allied and Associated countries.

Article 315—All aerodromes in Germany open to national public traffic shall be open for the aircraft of the Allied and Associated Powers, and in any such aerodrome such aircraft shall be treated on a footing of equality with German aircraft as regards charges of every description, including charges for landing and accommodation.

Article 316—Subject to the present provi-

sions, the rights of passage, transit and landing, provided for in Articles 313, 314 and 315, are subject to the observance of such regulations as Germany may consider it necessary to enact, but such regulations shall be applied without distinction to German aircraft and to those of the Allied and Associated countries.

Article 317—Certificates of nationality, airworthiness, or competency, and licenses, issued or recognised as valid by any of the Allied or Associated Powers, shall be recognised in Germany as valid and as equivalent to the certificates and licenses issued by Germany.

Article 318—As regards internal commercial air traffic, the aircraft of the Allied and Associated Powers shall enjoy in Germany most favoured nation treatment.

Article 319—Germany undertakes to enforce the necessary measures to ensure that all German aircraft flying over her territory shall comply with the Rules as to lights and signals, Rules of the Air and Rules for Air Traffic on and in the neighborhood of aerodromes, which have been laid down in the Convention relative to Aerial Navigation concluded between the Allied and Associated Powers.

Article 320—The obligations imposed by the preceding provisions shall remain in force until January 1, 1923, unless before that date Germany shall have been admitted into the League of Nations or shall have been authorised, by consent of the Allied and Associated Powers, to adhere to the Convention relative to Aerial Navigation concluded between those Powers.

Notes

AERIAL PRIZE COURT NEEDED

When the British Prize Court, in January, 1919, awarded a prize bounty to the British aviators who had participated in the destruction of the German cruiser *Breslau*, a precedent was established which permits considering the application in the air of the principles of Maritime Prize Law.

If the prize law is applicable in the air, then the five French aviators who captured the L-49 Zeppelin on October 20, 1917, are entitled to part of the \$2,000,000, which was the value of the captured airship, and a prize bounty for the nineteen members of the crew made prisoners; and the Allied aviators who captured enemy aeroplanes are likewise entitled to part of the value of the captured planes and prize bounty for enemy aviators made prisoners.

Aviators' Part in Destruction of the "Breslau"

The aviators' part in the destruction of the *Breslau*, and the award of prize bounty are told in the following account from the London *Times*:

The President of the Prize Court made a decree for 2,750 Pounds as prize bounty on a motion on behalf of H.M.S. *Raglan*, *M.28*, *Lizard*, *Tigress*, *Supernal*, and *Anchor of Hope II*, and a squadron of aeroplanes, for the destruction of the German Cruiser *Breslau*.

Captain Maxwell Anderson, R.N., who appeared in support of the motion, said that this was the first claim which had been made by officers of H.M. Air

Force, and it was made by virtue of Section 3, sub-Section 2 of the Naval Prize Act, 1918. The crew of the *Breslau* numbered 550 persons, and, therefore, the bounty claimed at 5 Pounds a head amounted to 2,750 Pounds. An affidavit had been sworn by Lord Broome, the senior officer present. It was as follows:

On Jan. 20th, 1918, I was in command of His Majesty's ship *Raglan* and senior officer of a detached squadron consisting of His Majesty's ships *M.28* (Lt.-Cmdr. Donald Maegregor, R.N.), *Lizard* (Lt. Norman Albert Gustave Ohlenschlager, R.N.), *Tigress* (Lt.-Comdr. Joseph Bernard Nevill, R.N.), *Supernal* and *Anchor of Hope II*. The said detached squadron was a part of the naval force blockading the Dardanelles. At about 5 a.m. on the said Jan. 20th when near Kusu the German cruisers *Goeben* and *Breslau* were observed by my squadron and an engagement followed. In the course of the said engagement the *Breslau* was forced on to the British minefields in the vicinity and there blew up and sank. The *Goeben*, seriously damaged, made good her escape, while of my force H.M.S. *Raglan* and *M.28* were destroyed. From survivors rescued and taken prisoners I ascertained that the crew of the *Breslau* consisted of 550 persons and no more.

In addition to His Majesty's ships there took part in and were present at the destruction of the *Breslau* certain aircraft, a part of the Air Force, embarked in H.M.S. *Ark Royal*. The names of the crews, being the pilots and observers of the said aircraft, are as follows: Capt. Ralph Squire Sorley, Capt. T. W. B. Grigson, Capt. T. R. Haekman, Capt. T. H. Piper, Capt. P. K. Fowler, Capt. C. B. Wincott, Lt. D. F. Murray, Lt. F. C. Smith, and Lt. O. R. Gayford.

In reply to the President, counsel said that the *M.28* was a monitor.

Mr. Case for the Procurator-General, did not oppose the motion.

Solicitors—Mr. Arthur Tyler, on behalf of Messrs.

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Stilwell and Sons, Navy and Prize Agents, for H.M.S. *Raglan*, M.28 and *Anchor of Hope II*; Mr. Arthur Tyler, on behalf of Messrs. Cox and Co., Navy and Prize Agents, for Aircraft embarked on H.M.S. *Ark Royal*; Messrs. Botterell and Roches, on behalf of Messrs. Holt and Co., Navy and Prize Agents, for H.M.S. *Tigress* and *Lizard*; and the Treasury Solicitor for the Procurator-General.

Bounty Awarded for Destruction of U.B.20 by Aviators

In the British Prize Court on February 17th, 1920, before the President, a prize bounty amounting to £120 was granted to the crews of H.M. Seaplanes 8,662 and 8,676 for the sinking of U.B.20 on July 29th, 1917.

Major Arthur Barker, R.A.F., who at that time was second in command of Seaplane 8,662, and a sub-lieut. R.N.A.S., stated that the late Capt. Charles Leslie Young, D.S.C., R.A.F., was in command when Seaplane 8,662, in company with Seaplane 8,676 (Major Warren Rawson Mackenzie, R.A.F.), sighted a submarine in the North Sea. Both aircraft engaged the U-boat, which was hit on the stem by the first bomb dropped. For eight or nine minutes the submarine manoeuvred on the surface, but after other bombs had hit her she sank by the stern, and her sides burst open. There were no survivors of a crew of 24.

How the L-49 Was Captured

The official report of Lieut. Lefevre, commander of the aerial patrol that captured the L-49, is of special interest as it relates the first capture of an airship and the case may yet come before the prize courts.

The report, which is reproduced from the magazine *Air Power* (New York), reads as follows:

Soon after 6 p. m. on the 20th of October, 1917, the cyclist of the Squadron brought the following telephone message:

"At 6.10 an enemy Zeppelin came over Espinal, going north—2500 to 3000 meters in height."

I immediately informed all the pilots of the squadron and sent by the cyclist the order to bring out immediately all the machines available.

Arrived on the ground at 6:25, and having doubt of the presence of the Zeppelins, I telephoned to Espinal, who twice signalled rapidly of the presence of two Zeppelins flying together. The weather was absolutely bad—a thick bank of fog, very low, hid the heavens and I hesitated to send out my pilots. However, I gave order to Sub-Lieut. Lefargue to go up and cross the bank of fog, to see if he could detect the Zeppelins, and report immediately.

Sub-Lieut. Lefargue left at 6:30 and returned at 6:35, reporting that the fog was very thick up to 800 meters; but above that the sky was blue—and had seen the two Zeppelins.

I gave orders to the patrol—Sub-Lieut. Lefargue, chief of the patrol; Marechal des Logis De la Marque, Corporal Fourier Vandendorpe, Corporal Denis, and Corporal Gresset, to take their departure. The Sub-Lieut. Lefargue started immediately, and the other three followed. Only Corporal Vandendorpe could not leave on account of motor trouble.

My machine was not available, so I ordered out the machine of Marechal des Logis D—who had gone on leave the day before, and went quickly, following Corporal Denis.

The machines were lost immediately in the bank of fog, but I found them again at 900 meters, as we emerged from the layer of fog. Sub-Lieut. Lefargue was at the head of the formation.

Immediately I saw the two Zeppelins at a great height, steering towards the northeast. I was between Espinal and Lunéville. The fog was thick and completely hid the earth from me, so I did not know exactly where I was.

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The patrol still climbing to gain height, I directed their course between the Zepps, to cut off the route homeward. Arriving at the height of 4000 meters, the Zep at the right must have seen us, for it changed its course from northeast to go straight north, following thereby the second Zep at the left. At this time we were only four, one of the Nieuports, that of Corporal Denis, having left us.

Arriving at a height of 5300 meters, the patrol found themselves higher than the Zepps. We dived for them.

Thinking of attacking, the Zeppelins made a quarter turn, going to the southwest; the second higher followed the same manoeuvre. The first result succeeded, because they made a half turn, going in the direction of France.

Sub-Lieut. Lefargue, chief of the patrol, now attacked the L-49, which was the beginning of the fight. The other aviators immediately followed the example.

The Zeppelin, fearing the attack, seemed to descend. At this moment I counted my machines—we were five. Corporal Vandendorpe had rejoined us.

While the Zeppelins pointed down, we followed them without shooting. But as soon as they tried to straighten themselves, immediately two machines would dive simultaneously, and as soon as the L-49 heard the guns she dived again. After a sudden dive, she started to go up almost straight.

At that moment we dived down, and the Zeppelin did not insist.

To make her dive without her catching fire, we continued to shoot a few cartridges at her side. Arriving in the neighborhood of 1000 meters, the Zep hoisted

the white flag, signaling her surrender. We continued to make circles around her.

At about 300 meters, I saw the earth. We passed at about 200 meters between two woods, and the dirigible settled easily. We made several turns around until the crew had come out and the balloon showed she could not leave the ground.

This was at 8:45. I landed immediately at a distance of about 800 meters from the airship, followed by three of my pilots, and I rushed across the fields, gathering with me as I went some peasants and hunters.

Arriving at the side of the Zeppelin, we saw the crew grouped at about 100 meters from the L-49. The captain of the airship came towards me and said, "You are the winner. Here is my crew, and I place myself under your protection and consider myself a prisoner of war."

I immediately assembled some civilians with guns and placed the L-49 under the guard of two pilots and the volunteers, and with the marshal of the logis de la Marque at the head of the nineteen prisoners, I went to Bouronne-les-Bains, fearing all the while that the population would become excited and strike the prisoners, who were then turned over to the gendarmes to keep them isolated one from the other.

Corporal Denis gave chase to the second Zep. Arriving at an altitude of 5600 meters he entered a lively fight, continuing to 800 meters.

He was caught under a violent fire of their guns, throwing explosive bullets. Having run out of gas, he landed at Chetives (10 kilometers de Neuf Chateau) at 9:20.

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SALE OF AIRCRAFT TO WARRING NATIONS BY MANUFACTURERS OF NEUTRAL NATIONS

In 1914, soon after the beginning of the World War, American aircraft manufacturers received orders from Allied countries for land aeroplanes and hydroaeroplanes. Germany protested against the exportation of hydroaeroplanes claiming that they were "vessels," therefore subject to the restrictions provided in Article 8 of the Convention Concerning Rights and Duties of Neutral Powers in Naval War, which are as follows:

"A neutral Government is bound to employ the means at its disposal to prevent the fitting out or arming of any vessel within its jurisdiction which it has reason to believe is intended to cruise, or engage in hostile operations against a Power with which that Government is at peace. It is also bound to display the same vigilance to prevent the departure from its jurisdiction of any vessel intended to cruise, or engage in hostile operations, which has been adapted entirely or partly within the said jurisdiction for use in war."

The U. S. State Department rendered the opinion that "both the hydroaeroplane and the aeroplane are essentially aircraft; as an aid in military operations they can only be used in the air; the fact that one starts its flight from the surface of the sea and the other from the land is an incident which in no way affects their aerial character."

The following statement was also issued by the State Department in October, 1914:

"The Department of State has received numerous inquiries from various merchants and other persons

as to whether they should sell to Governments of nations at war contraband articles without violating the neutrality of the United States; and the department has also received complaints that sales of contraband were being made on the apparent supposition that they were unneutral acts which this Government could prevent.

"In view of the number of communications of this sort which have been received, it is evident that there is a widespread misapprehension among the people of this country to the obligations of the United States as a neutral nation in relation to trade in contraband and as to the powers of the executive branch of the government over persons who indulge in it. For this reason it seems advisable to make an explanatory statement on the subject for the information of the public.

"In the first place it should be understood that, generally speaking, a citizen of the United States can sell to a belligerent Government or its agent any article of commerce which he pleases. He is not prohibited from doing this by any rule or international law, by any treaty provision or by any statute of the United States. It makes no difference whether the articles sold are exclusively for war purposes, such as firearms, explosives, etc., or are foodstuffs, clothing, horses, etc., for the use of the army or navy of the belligerent.

"Furthermore a neutral Government is not compelled by international law, by treaty or by statute to prevent these sales to a belligerent. Such sales therefore by American citizens do not in the least affect the neutrality of the United States.

"It is true that such articles as those mentioned are considered contraband and are, outside the territorial jurisdiction of a neutral nation, subject to seizure by an enemy of the purchasing Government, but it is the enemy's duty to prevent the articles reaching their destination, not the duty of the nations whose

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citizens have sold them. If the enemy of the purchasing nation happens at the time to be unable to do this, that is for him one of the misfortunes of war; the inability, however, imposes upon the neutral government no obligation to prevent the sale.

"Neither the President nor any executive department of the Government possesses the legal authority to interfere in any way with trade between the people of this country and the territory of a belligerent. There is no act of Congress conferring such authority or prohibiting traffic of this sort with European nations, although in the case of neighboring American republics, Congress has given the President power to pro-

claim an embargo on arms and ammunition when, in his judgment, it would tend to prevent civil strife.

"For the Government of the United States itself to sell to a belligerent nation would be an unneutral act, but the right of a private individual to sell to a belligerent any product of the United States is neither unlawful nor unneutral, nor within the power of the Executive to prevent or control.

"The foregoing remarks however do not apply to the outfitting or furnishing of vessels in American ports or of military expeditions on American soil in aid of a belligerent. These acts are prohibited by the neutrality laws of the United States."

Notes

ENGLAND-HOLLAND FLYING CONVENTION

Pending a definite agreement on the basis of the International Air Convention, and in order to enable Dutch and British Aircraft to visit England and the Netherlands should they so desire, during the Aircraft Exhibition at Amsterdam in 1919 arrangements were made with the Netherlands and Belgian Governments for the temporary opening of civil communication by air between the Netherlands and Great Britain. In view of the distance of the sea passage from the East Coast of England to Holland, seaplanes only may cross by this route, and aeroplanes will proceed to Holland via the Straits of Dover, France, and Belgium. Arrangements have been made, by the courtesy of the Belgian authorities, for a refuelling base at Evere, near Brussels. Aeroplanes proceeding to Holland by this route may cross the Belgian frontier at any point which may be suitable.

The following is the text of the agreement with Holland:

Except in emergency, both seaplanes and aeroplanes entering Holland must land at Amsterdam.

Except in emergency, aircraft entering England must land at : (1) Seaplanes, Felixstowe; (2) aeroplanes, Lympne or Hounslow.

Seaplanes will cross the Dutch coast between Scheveningen and Ymuiden. Aeroplanes entering Holland via Belgium may cross the Belgian frontier at any point which may be suitable.

Seaplanes will cross the English coast between Orfordness and the Naze, aeroplanes between Folkestone and Dungeness.

All machines and pilots taking advantage of these facilities must be provided with and carry such documents as may be required by their respective Governments, or by the competent authority.

Passports will be carried by both passengers and crews, but such passports will not require the Dutch visa on leaving the United Kingdom if the period of stay in Holland does not exceed two days.

No goods must be carried, either on the outward or return journey, without Customs formalities being observed.

If aviation material is destined definitely for Holland Customs dues must be paid.

A similar provisional convention was signed between Switzerland, France and Great Britain on February 20, 1920.

Notes

BRITISH AERIAL TRANSPORT COMMITTEE

The Interallied Aeronautic Committee of the Peace Conference was greatly assisted by the exhaustive report of the British Aerial Transport Committee which was appointed by the British Government on May 22nd, 1917, and reported on February 7th, 1918. The names of the members of this important committee and the departments, etc., represented by them follow:

* Viscount Northcliffe, Chairman.
Major Baird, C.M.G., D.S.O., M.P., Deputy Chairman.
The Duke of Atholl, K.T., D.S.O., Mr. A. E. Berriman, O.B.E., Major-General W. S. Brancker, A.F.C., Air Ministry.
Mr. J. H. Balfour Browne, K.C., Sir M. D. Chalmers, K.C.B., Home Office.
Mr. G. B. Cockburn, O.B.E., † The Earl of Drogheda, Foreign Office.
Mr. G. E. A. Grindle, C.M.G., Colonial Office.
Sir Laurence Guillemard, K.C.B., Board of Customs and Excise.
Mr. G. Holt-Thomas, Mr. Claude Johnson. (Resigned 11th March, 1918.) Mr. W. Joynson Hicks, M.P., Mr. F. W. Lanchester. (Resigned 21st February, 1918.) Sir Thomas Mackenzie, K.C.M.G., Dominion of New Zealand.
Brig.-General E.M. Maitland, D.S.O., Major-General Sir J. W. McCay, K.C.M.G., C.B., Commonwealth of Australia.
Brig.-General Lord Montagu, C.S.J., India Office.
Mr. G. E. P. Murray, C.B., General Post Office.
Lieut.-Colonel M. O'Gorman, C.B., † The Hon. Sir G. H. Perley, K.C.M.G., Dominion of Canada.
Colonel J. C. Porte, C.M.G., Col. J. W. Pringle, Board of Trade.
Major-General Ruck, C.B., C.M.G., Rt. Hon. W. P. Schreiner, C.M.G., K.C., Union of South Africa.
Sir Napier Shaw, LL.D., F.R.S., Meteorological Office.
Mr. J. D. Siddeley, C.B.E., Mr. T. Sopwith, C.B.E., Lord Sydenham, G.C.S.I., G.C.M.G., G.B.E. (Resigned 11th

* Viscount Northcliffe was called away on a mission to the United States after the first meeting, May 31st, 1917, and from that time down to the date on which the Final Report was presented, Major Baird acted as Chairman of the Committee.

† Lord Drogheda resigned on January 31st, 1918, and the Hon. C. H. Tufton, C.M.G., was appointed in his place to represent the Foreign Office.

‡ Lieut. Colonel E. R. Wayland represented Sir G. Perley on all the Special Committees, and, when necessary, at meetings of the Main Committee.

February, 1918.) Brig.-General A. V. Vyvyan, D.S.O., Admiralty.

Mr. H. G. Wells, Mr. H. White-Smith, Mr. W. Tyson Wilson, M.P. (Resigned 16th June, 1917.)

The following, who had been co-opted as members of the Special Committees, were appointed members of the Main Committee on December 12th, 1917:—

Mr. Butler Aspinall, K.C.

Mr. Leonard Bairstow, C.B.E., F.R.S.

Major the Right Hon. H. T. Baker, M.P.

Captain F. S. Barnwell, O.B.E.

Mr. R. O. Cary, O.B.E.

Mr. A. E. L. Chorlton, C.B.E.

Mr. W. Barnard Faraday.

Sir R. T. Blazebrook, C.B., F.R.S.

Brig.-General R. M. Groves, C.B., D.S.O., A.F.C.

Mr. Nevile Gwynne.

Sir Frank Heath, K.C.B.

Colonel H. G. Lyons, F.R.S.

Mr. Arthur Morley.

Professor J. E. Petavel, F.R.S.

Mr. Frank Pick.

Major E. Elvey Robb.

Colonel the Master of Sempill.

Major T. Vincent Smith, M.C.

Major G. I. Taylor.

Mr. A. E. Turner.

Mr. H. J. Wilson.

The following were also appointed members of the Main Committee:—

December 1st, 1917. The right Hon. Lord Morris, K.C.M.G. (representing Newfoundland).

March 9th, 1918. Colonel P. N. Buckley (additional representative of the Commonwealth of Australia).

March 13th, 1918. * Lieut.-Colonel D. H. Hyde Thomson.

March 13th, 1918. Lieut.-Colonel J. T. C. Moore-Brabazon, M.C.

March 13th, 1918. Lieut.-Colonel W. Lockwood Marsh.

February 5th, 1918. The Hon. C. H. Tufton, C. M. G. (See note † above.)

SECRETARIAT.

Mr. D. O. Malcolm, Secretary.

Captain E. H. Tindal Atkinson, Assistant Secretary.

Mr. H. Harper, Assistant Secretary (Technical).

* Colonel Hyde Thomson was killed in a flying accident on May 21st, 1918.

Notes

DISQUALIFICATION BY A NATIONAL CLUB EXCLUDES DISQUALIFIED ORGANIZATION OR PILOT FROM PARTICIPATION IN CONTESTS THROUGHOUT THE WORLD

As provided by the rules of the International Aeronautic Federation, disqualification by a national aero club, excludes the disqualified organization or pilot or person from participation in contests or events throughout the world. Notice of disqualification is sent by the national aero club to the Federation, which notifies the national aero clubs of the world.

Notice of disqualification is also sent to the aero clubs affiliated with the national aero clubs in each country. Records made by the disqualified pilot are not recognized. The duration of the period of disqualification is left to the discretion of the national aero club.

How the Aero Club of America Issues Pilot Certificates in United States

The Aero Club of America, whose headquarters are in New York City, has been the sole representative of the International Aeronautic Federation in the United States since 1905 and in this capacity has issued the pilot certificates, sanctioned contests and enforced the regulations of the International Aeronautic Federation in the United States.

At the beginning of the calendar year 1920 the Club had issued a total of close to 8000 international pilot certificates which are recognized by the authorities in every part of the world. Rules and regulations and the tests to be met by pilot to obtain the F. A. I. certificate

can be obtained from the Secretary, Aero Club of America, New York City.

How Aerial Contests and Records Have Been Controlled Since 1905

Since 1905 Aerial contests have been controlled throughout the world by the regulations enacted by the International Aeronautic Federation (Federation Aeronautique Internationale) which is a Federation of the national aero clubs of the countries of the world.

The Federation's jurisdiction over contests and records, and its authority to sanction aeronautic events and license pilots has been recognized by the French Courts and by the Governments of different countries. The National Aero Club of each country is a member of the Federation and enforces the Federation's rules and regulations in the country which it represents.

French Court's Decision Recognizing Aero Club of France's Authority to Disqualify Another Club

The authority of a national aero club, member of the International Aeronautic Federation, to disqualify another club for not complying with the rules of the Federation was first recognized by a French Court in January, 1911, following the suit for damages brought against the Aero Club of France, the representative of the

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Federation in France, by the Aeronautique Club of France, which had been disqualified by the former for failing to comply with the regulations of the Federation in organizing a contest.

The opinion rendered in this case is produced herewith in the original French, together with an English translation:

Le 9 janvier, la 5^e Chambre supplémentaire du Tribunal civil de la Seine, présidée par M. de Gauran, a rendu son jugement dans le proces intenté par l'Aéronautique-Club de France à l'Aéro-Club de France et a donné pleinement gain de cause à ce dernier. Ainsi se trouve tranché au profit de l'Aéro-Club de France un point de droit sportif des plus importants qui intéresse en même temps tous les groupements régissant les divers sports dans un pays donné. Nous n'insisterons pas sur le point en litige qui est très nettement indiqué dans le dispositif du jugement reproduit ci-dessous. Nous tenons simplement à faire ressortir la prudence et la modération avec lesquels l'Aéro-Club avait usé du droit qui lui était contesté et que les tribunaux viennent de consacrer.

Voici les attendus du jugement :

"Attendu que l'Aéronautique Club de France ayant été à la date du 18 juin 1910 disqualifié pour un an par la Commission sportive de l'Aéro-Club de France, demande du tribunal l'annulation de la disqualification prononcée contre lui et 10,000 fr. de dommages-intérêts pour le préjudice que cette mesure lui aurait causé ;

"Attendu que pour apprécier le bien fondé de cette demande il échet d'examiner quelle est l'étendue des pouvoirs dont dispose l'Aé. C. F. ;

"Attendu qu'à la date du 14 octobre 1905, sous le titre de 'Fédération Aéronautique Internationale' il a été fondé une union internationale entre les fédérations ou clubs régissant le sport aéronautique dans leurs nations respectives ; que l'Aé. C. F. est la seule puissance sportive en France reconnue par la F. A. I. et que seule elle a qualité pour accepter l'affiliation des sociétés aéronautiques françaises ; qu'aux termes de l'article 10 de son règlement, les

On January 19th, the Fifth Supplementary Chamber of the Civil Tribunal of the Seine, M. de Gauran Presiding Justice, rendered its decision in the action brought by the Aeronautique Club of France against the Aero Club of France, giving judgment fully in favor of the latter. Thus the Aero Club has profited by the establishment of one of the most important points of law governing sports, which simultaneously affects all the groups controlling the various sports in any given country. We will not dwell upon the point in litigation, which is very clearly set forth in the course of judgment reproduced below. We content ourselves merely with emphasizing the prudence and moderation with which the Aero Club had exercised the rights that were challenged and which the courts have now confirmed.

The following are the findings of the Court :

"Inasmuch as the Aeronautique Club of France, having been on the date of June 18, 1910, disqualified for one year by the Sports Committee of the Aero Club of France, asks of the Court the annulment of the disqualification pronounced against it and 10,000 francs. damages for the injury which said disqualification has caused it.

"Inasmuch as in order to determine whether this demand is well founded, it is necessary to determine the extent of the powers vested in the Aero Club of France.

"Inasmuch as on the date of October 11, 1905, there was founded, under the title of 'International Aeronautic Federation,' an international union between the federations or clubs controlling the aeronautic sport in their respective nations ; That the Aeronautique Club of France is the only club in France whose authority is recognized by the International Aeronautic Federation, and the only one which is authorized to accept the affiliation of French aeronautic societies ; and that by the terms of Article 10 of its Constitution, the affiliated societies are bound to respect the rules of the sport as laid down by the International Aeronautic Federation and the special regulations of the Aero Club of France.

"Inasmuch as on the date of April 6, 1906, the Aeronautique Club of France requested and obtained its affiliation, binding itself by this very act to subject

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sociétés adhérentes sont tenues de respecter les règles sportives de la F. A. I. et les règlements particuliers de l'Aé. C. F.;

“Attendu qu'à la date du 6 avril 1906 l'Aéronautique Club de France a sollicité et obtenu son affiliation, s'engageant par cela même à soumettre aux statuts de l'Aé. C. F. dont il avail pris connaissance;

“Attendu que le chapitre III des statuts et règlements de la F. A. I. édicte des mesures générales d'organisation applicables à tous les concours; qu'il est dit notamment que les règlements des concours organisés par les sociétés affiliées doivent spécifier en première page que ces concours ont lieu sous les règlements de la F. A. I.;

“Attendu que l'Aéronautique-Club avait organisé le dimanche 2 aout 1908 un concours d'atterrissement en omettant d'indiquer que cette épreuve était courue sous les règlements de la F. A. I.; qu'une observation lui a été faite à ce sujet par la Commission Sportive de l'Aéro-Club qui a pour mission de faire respecter les statuts et, le cas échéant, de faire prononcer des sanctions pénales; que l'A. C. D. F. refusa de se soumettre prétextant que son concours était réservé aux seuls pilotes de sa société;

“Attendu que la Commission sportive en présence de cette première infraction imputable à une interprétation des règlements ne crut pas devoir insister et se borna seulement à inviter la société affiliée à prendre bonne note pour l'avenir que tous ses concours sans exception devaient être organisés sous les règlements de la F. A. I.;

“Attendu qu'à la date du 15 mai 1910, l'A. C. D. F. organisa au Parc de Rueil un concours ‘de plus longue distance’ en ne faisant pas figurer dans son programme qu'il était placé sous les règlements de la Fédération; que la Commission sportive de l'Aé. C. F. la prévint le 26 mars 1910 de vouloir bien réparer cette omission, mais qu'elle refusa de s'incliner prétextant comme elle avait fait en 1908 que son concours était réservé aux seuls pilotes munis de son brevet;

“Attendu que la Commission sportive dans sa séance du 29 avril 1910 décida que si l'A. C. D. F. persistait dans sa résistance les organisateurs du concours, les officiels et tous les concurrents qui y prendraient part seraient disqualifiés;

itself to the rules of the Aero Club of France, of which it already had knowledge.

“Inasmuch as Chapter III of the Statutes and Regulations of the International Aeronautics Federation establishes the general terms of organization applicable to all competitions; that it is specifically stated that the regulations of competitions organized by the affiliated societies must specify on the first page that these competitions take place under the rules of the International Aeronautic Federation.

“Inasmuch as the Aeronautique Club had organized, Sunday, August 2, 1908, a competition in alighting, and had neglected to state that the contest was to be held under the rules of the International Aeronautic Federation; that notice of this omission was served by the Sports Committee, whose duty it is to see that the rules are obeyed, and in case of infringement to decree the penalties; that the Aeronautique Club of France refused to obey, on the ground that its contest was limited to the pilots among its own members.

“Inasmuch as the Sports Committee, confronted with a first infraction attributable to a different interpretation of rules, did not feel called upon to insist, beyond notifying the affiliated society must remember that in the future all its contests, without exception would have to be conducted under the regulations of the International Aeronautic Federation.

“Inasmuch as on the date of May 15, 1910, the Aeronautique Club of France organized at the Parc de Rueil a contest ‘For the Longest Distance,’ without including in its program any statement that the contest was to be held under the rules of the Federation; that the Sports Committee of the Aero Club of France gave notice on March 26, 1910, that this omission must be corrected, but that the other society refused to yield, claiming as it already had done in 1908 that its contest was limited to pilots of its own membership.

“Inasmuch as the Sports Committee, at a meeting held April 29, 1910, decided that if the Aeronautique Club of France persisted in its refusal, the organizers of the contest, the officers and all competitors who took part in the contest should be disqualified.

“Inasmuch as before rendering its decision public, the Sports Committee gave notice of it to the Presi-

"Attendu toutefois qu'avant de rendre publique sa décision, la Commission sportive en informa le président de l'A. C. D. F. par lettre recommandée du 30 avril 1910, faisant appel à son esprit sportif pour l'observation des règlements; qu'une autre lettre du 4 mai 1910 également recommandée fut encore envoyée dans le même sens;

"Attendu qu'enfin le 11 juin 1910 pour tâcher de vaincre la résistance de la société affiliée, le secrétaire de la Commission sportive écrivait à son président: 'Dans le but de tenter un dernier effort de conciliation et pour vous prouver tout le désir de la Commission sportive d'éviter l'application d'une mesure de rigueur, je suis chargé de vous remettre sous ce pli le communiqué de disqualification qui sera public contre votre club, si la présente lettre est restée sans réponse le lundi 13 courant à 6 heures du soir';

"Attendu qu'aucune réponse n'étant arrivée à la date fixée la Commission sportive, le 18 juin 1910, disqualifia pour la durée d'une année l'A. C. D. F.;

"Attendu qu'aux termes de l'article 7, paragraphe 10, des statuts et règlements de la F. A. I. les commissions sportives sont chargées de constituer pour tous les cas prévus la haute juridiction sportive; qu'aux termes de l'article 63 des mêmes statuts la disqualification à temps 'est une des pénalités que lesdites commissions ont le pouvoir d'infliger';

"Attendu qu'il est certain que l'Aé. C. F. tient directement ses pouvoirs de la F. A. I. et que seule la commission sportive a qualité en France pour prononcer les pénalités prévues par ses règlements, il échel maintenant d'examiner si c'est à bon droit qu'elle a pris contre la société demanderesse la mesure de rigueur incriminée;

"Attendu que le chapitre III des statuts de la F. A. I. concerne les 'mesures générales d'organisation applicables à *tous les concours*'; qu'il ressort des termes mêmes de ce titre que quelle que soit la nature du concours, qu'il soit international, public ou même privé, il doit dans tous les cas avoir lieu sous les règlements de la F. A. I.; que si une première fois en 1908, la société A. C. D. F. avait pu se méprendre sur l'interprétation des statuts, elle ne peut invoquer sa bonne foi pour le concours 1910; qu'ainsi qu'il a été

dent of the Aeronautique Club of France, in a letter dated April 30, 1910, appealing to his spirit as a sportsman to see that the rules were observed; that another letter, dated May 4th, 1910, couched in similar terms, was also sent.

"Inasmuch as finally on the 11th of June, 1910, in a further attempt to overcome the resistance of the affiliated society, the secretary of the Sports Committee wrote to its president: 'To the end of making a last attempt at conciliation and proving to you the great desire of the Sports Committee to avoid resorting to harsh measures, I am required to notify you herewith that a notice of disqualification against your club will be made public if the present letter remains unanswered on Monday the 13th inst., at 6 o'clock P. M.'

"Inasmuch as no reply having been received on the date assigned, the Sports Committee on June 18, 1910, disqualified the Aeronautique Club of France for the period of one year;

"Inasmuch as, by the terms of Article 7, paragraph 10, of the Statutes and Regulations of the International Aeronautic Federation, the Sports Committees are empowered to constitute in all prescribed cases the final jurisdiction in sports; and inasmuch as by the terms of Article 63 of the same Statutes, temporary disqualification is 'one of the penalties which the said Committees have the power to inflict';

"Inasmuch as it is established that the Aero Club of France derives its powers directly from the International Aeronautic Federation, and that its Sports Committee is the sole body in France qualified to pronounce the penalties prescribed by its regulations; and inasmuch as it now remains only to decide whether it has legally exercised against the Plaintiff Society the degree of rigor protested against;

"Inasmuch as Chapter III of the Statutes of the International Aeronautic Federation concerns the 'general measures of organization applicable to *all contests*'; and inasmuch as it follows from the very terms of this section that whatever might be the nature of the contest, whether international, public or even private, it must be conducted in all cases under the rules of the International Aeronautic Federation; and inasmuch as even if on one first occasion, in 1908, the

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expliqué plus haut, elle a été à diverses reprises prévenue par la Commission sportive de l'Aé. C. F. et que c'est en toute connaissance de cause qu'elle ne s'est pas conformée aux règlements dont s'agit;

"Attendu qu'elle est d'autant moins excusable d'avoir violé les statuts par elle librement acceptés que l'affiliation à l'Aé. C. F. est renouvelable tous les ans; qu'elle connaissait depuis 1908 les conditions dans lesquelles les concours devaient être établis et que si ces conditions ne lui convenaient pas, il lui était loisible de ne pas renouveler son affiliation en 1909 et 1910;

"Attendu dès lors que la Commission sportive de l'Aé. C. F. a avec juste raison pris contre l'Aéronautique-Club de France une mesure de rigueur que les règlements de la F. A. I. lui permettaient d'infliger; qu'il y a lieu dans ces conditions de débouter la société demanderesse.

"Pour ces motifs,

"Déclare la société de l'*Aéronautique-Club de France* mal fondée en sa demande, l'en déboute et la condamne aux dépens."

M. J. IMBREQUE, plaideait pour
l'Aéro-Club de France;
M. AZOULAY, plaideait pour
l'Aéronautique-Club de France.

said society, the Aeronautique Club of France, acted on a mistaken interpretation of the rules, it could not again plead good faith in the case of the contest of 1910; especially in view of the fact, as already explained, that it was repeatedly warned by the Sports Committee of the Aero Club of France, and that it deliberately and with full knowledge neglected to conform with the regulations in question;

"Inasmuch as this violation of regulations freely accepted by the Plaintiff is all the less excusable, for the reason that affiliation with the Aero Club of France is renewable annually; and that from 1908 onward the Plaintiff knew the conditions under which contests must be held, and that if these conditions were not acceptable, the Plaintiff Society was free not to renew its affiliation in 1909 and 1910;

"Inasmuch as the Sports Committee of the Aero Club of France exercised with good cause against the Aeronautique Club of France the disciplinary measure which the rules of the International Aeronautic Federation permitted it to inflict; and that under these conditions the Plaintiff's claims are without foundation;

"For these reasons, it is Adjudged: That the Plaintiff, the Aeronautique Club of France, has no valid ground for action, and judgment with costs must be entered in favor of the Defendant."

M. J. IMBREQUE, Attorney for the
Aero Club of France,
M. AZOULAY, Attorney for the
Aéronautique Club of France.

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